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IN THIS ISSUE

In the service of our country

Administrative Highlights 5

Proper Completion Assured by Radioactivity Logs 10

The Functions of the Materials Sub-Committee 12

The Why of Water Treatment 16

Naval Advisors to War Production Field Office 20

Los Angeles Basin Developments 25

Coastal Developments 27

San Joaquin Valley Developments 29

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March 29th, 1943

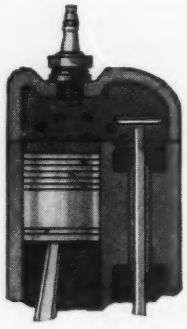
Telephone Number TUcker 2571

Dirty spark plugs waste gas!

as much as 1 gallon in 10! That's why they should be cleaned every 3,000 miles... replaced every 10,000. How long has it been since yours were checked?

1.

How would you feel if someone stole every tenth coupon out of your ration book? Dirty spark plugs can do it! What's worse, *you may not even be aware of it.*

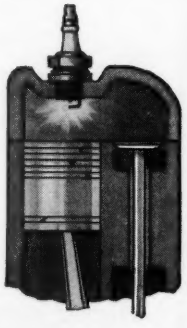


2.

Here's what happens: Every time a spark plug misses fire, the vaporized gasoline in the cylinder is blown out the exhaust, or seeps down into the crankcase. This not only wastes gas, but dilutes crankcase oil.

3.

One misfire wouldn't be so bad. For there are only a few drops of gasoline vapors in the cylinder at any one time. But when your car is going 35 M. P. H. *each spark plug fires 540 times per minute.*



4.

So if your plugs are badly fouled, if they miss fire as often as one time in ten, it isn't hard to see how they can cut your gas mileage from say 15 to 13½ miles per gallon.

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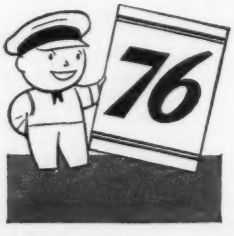

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Administrative Highlights •

A.P.I. War Time Conference

"War Time Conference" of the Pacific Coast District, Division of Production, American Petroleum Institute, was held at the Los Angeles Biltmore, March 23. Program Chairman was Carlton Beal of the Richfield Oil Corp. The Conference took the place of the usual Spring Meeting held in former years. There were no day sessions, the entire program taking place in the evening, following a dinner at 6 P. M.

Chairmen of the industry committees for District 5 took part in a symposium devoted to an explanation of the most recent procedure for scheduling California's war-time crude oil production.

Speakers included W. L. Stewart, Jr., H. A. Lapham and E. C. Babson, all of the Union Oil Co. of California; A. C. Saul, Shell Oil Co., Inc., Wm. Moeller, Southern Calif. Gas Co., L. E. Porter, Richfield Oil Corp., and W. R. Wardner, Calif. Conservation Committee.

Guest speaker was Herbert R. Gallagher, recently appointed director-in charge of the District 5 Office of the Petroleum Administration for War.

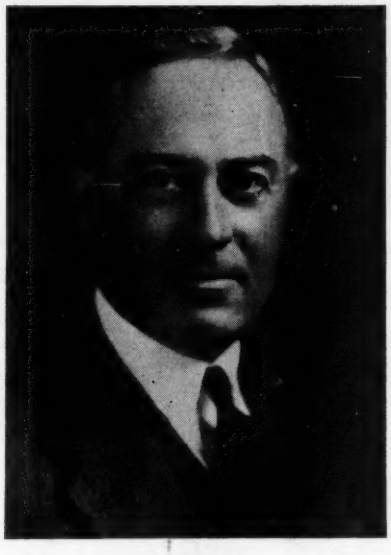
Chairman of the Conference was E. K. Parks, chairman of the Pacific Coast District, Division of Production, A.P.I. Chairman of the arrangements committee was C. M. Rader, assistant general manager, Kobe, Incorporated, L. George Trembley, vice president of Howard Supply Co., was in charge of ticket sales.

Officers elected for the ensuing year were: Carlton Beal, Richfield Oil Corp., chairman; W. G. Corey, Pacific Gear and Tool Works, treasurer; and D. S. Kilgour, Calif. Oil and Gas Association, secretary.

Address by Herbert R. Gallagher

Chairman and Gentlemen:

I am very happy to have this opportunity of talking to this group of members of the California branch of the A. P. I. The A. P. I. occupies a great place in the Oil Industry. It has been the meeting place for the Industry through all the formative years of the twenties and the thirties, when the Oil Industry made its greatest forward strides. It came into existence out of the last World War and the members of the Petroleum War Service Committee of that time largely formed its first Board of Directors at the end of the year 1919. During the years that have followed, many of the men who have left their mark on this Industry or have had any large part in its guidance and development have also been active members of the A. P. I.



H. R. Gallagher,
Guest Speaker

During the early meetings of the Board of Directors of the A. P. I. when its plans and policies were being formed, it became evident to the California Directors—who were at that time, as I recall it, Mr. Kenneth Kingsbury, Mr. E. W. Clark, Mr. Tom O'Donnell and myself, that California problems were not the same as those with which the large majority of the Board of Directors were familiar and were not susceptible to the same treatment as might be applied to the Eastern and Mid-Continent Areas. So, with traditional Western desire for independence, we demanded that a California Branch of the A. P. I. be established which should modify and apply in California the broad principles and policies of the A. P. I., as established for the Nation. The Board of Directors were, at first, far from willing to agree to this idea, but, as you know, in the end we won and California Branch was formed. The Oil Industry in California, as I have known it, has been formed of plenty of tough, strong individualists who have always quarreled and fought amongst themselves and probably always will do so. But, on one principle they have consistently maintained a solid front against all attacks—California must have freedom to work out its own problems and destiny with the least possible control from any outside sources. We would not have any group of men, no matter how wise they might be at home, trying to apply their rules, learned in the oil fields of other regions, to our great oil pools of California which were beyond the scope of their experience. We have in the past, and I believe always will, develop men of great stature in the Oil World to deal with our great oil fields

Carlton Beal,
Program Chairman

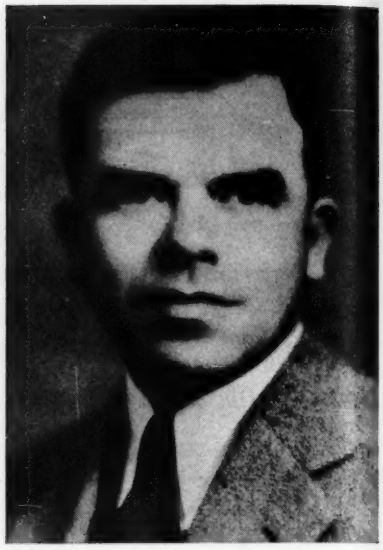
and their problems.

Now we are involved in another World War. The courses of all of our lives have been affected in some way. There is no such thing any longer as "business as usual." The A. P. I. has had to adapt itself to changed conditions. Most of the Board of Directors are now also members of the P. I. W. C. and the effort which they formerly devoted to the Industry, through the A. P. I., they have multiplied many times in the war effort. In a great many instances this has become the most important thing in their present lives. The men who worked on the A. P. I. Committees, such as your California Production Committee, are today working on the P. A. W. Committees to give whatever they can out of their lives to help to win the War. No one can tell how great a contribution the A. P. I. has given to this War through its vast army of trained men. Under its banner the men of the Oil Industry have learned how to plan and work together and so were prepared to carry out as a united team the great program of supplying one of the most essential needs of modern warfare. The A. P. I. is the Alma Mater of a large part of the Oil Industry and its teachings, and its precepts carry through to all of our war efforts. We must never forget that.

C. M. Rader,
Chairman of Arrangements

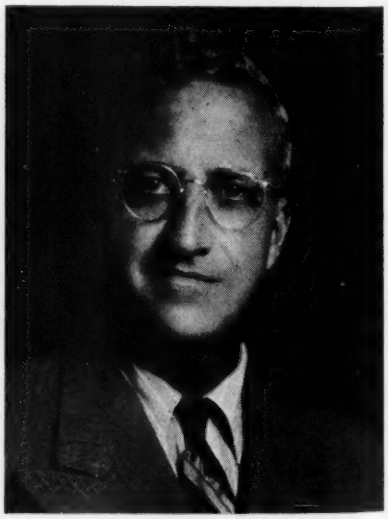
In the transition from peace to war effort it was inevitable that the same Authority, which guides and controls the Nation in all of its plans and work for the successful winning of the war, must likewise guide, coordinate and control the programs and work of the great wide-flung oil industry so that the maximum efficient results would be obtained for the Nation in its time of great need. The Oil Industry is very fortunate in the appointment of Secretary Harold L. Ickes and Mr. Ralph K. Davies to administer this authority. Both Mr. Ickes and Mr. Davies have had many years of intimate experience in oil affairs and with the Industry, and have a great understanding of and sympathy with its problems.

I am not going to attempt to talk about the work of the Petroleum Administration. You have had men of much wider and better knowledge of its organization and activities tell you about that. Probably many of you think you know too much about some of the Petroleum Administration's troubles, many of which have come home to you. You must not forget however that the Oil Industry affects and is affected by nearly every phase of our national life and work, and so cannot be a completely free agent and must of necessity fit its plans into the whole pattern for the nation at war.



E. K. Parks,
Chairman of Conference

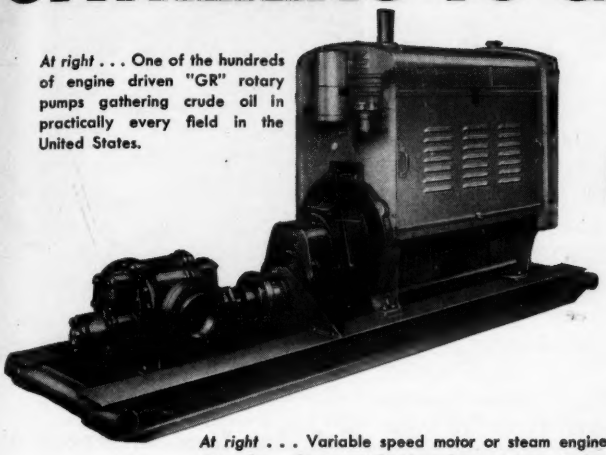
I want to earnestly assure you that there are no two men in this country who are more deeply concerned for the best interests of the Oil Industry and the men engaged in its work, than Mr. Ickes and Mr. Davies. They are literally giving their lives to help the Oil Industry do what every man in the Industry wants most to do— give all he has to the winning of the war. Mr. Ickes and Mr. Davies

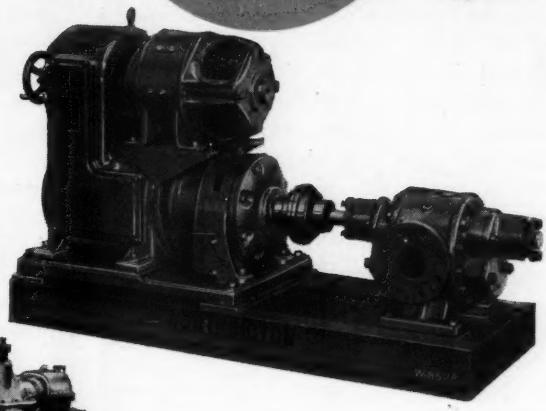


L. George Trembley,
In Charge of Ticket Sales

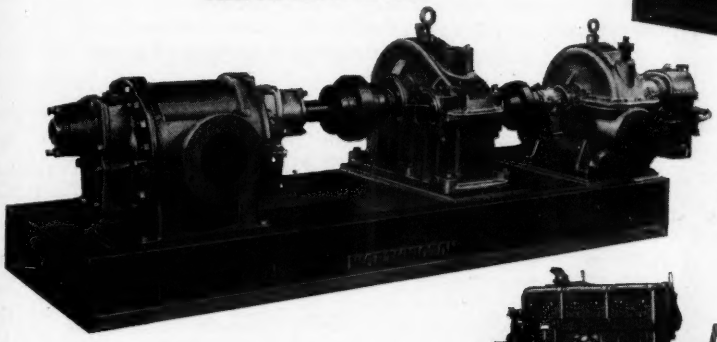
From GATHERING TO CARGO LOADING "GR" Rotary Pumps

At right . . . One of the hundreds of engine driven "GR" rotary pumps gathering crude oil in practically every field in the United States.

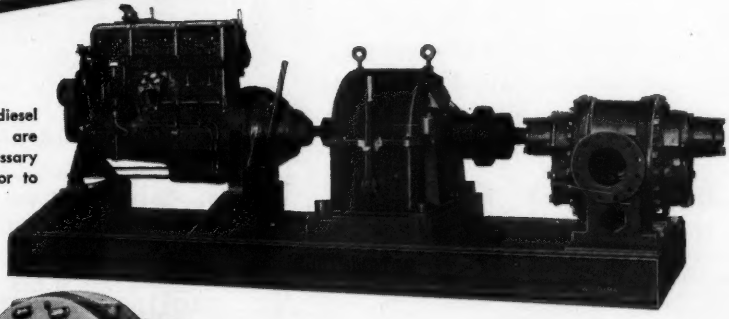




At right . . . Variable speed motor or steam engine drive for refinery applications from greases to hot asphalts or bright stocks. Jackets for bodies or stuffing boxes available for all sizes.

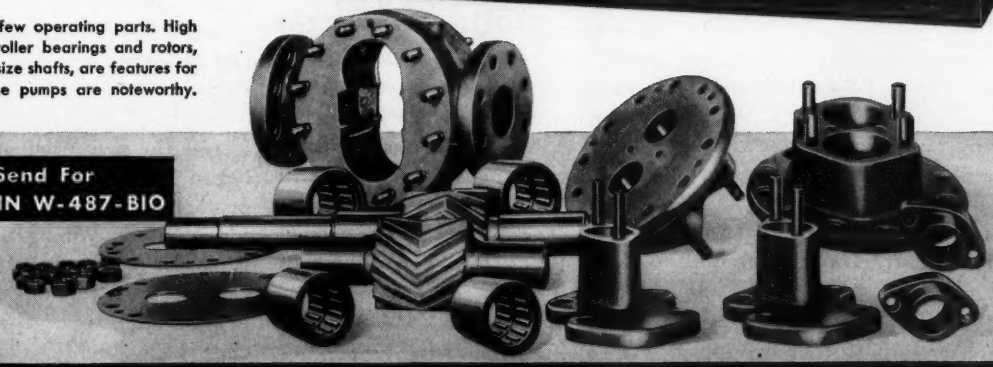


At left . . . Where steam is available to drive these cargo loading pumps Worthington-Moore steam turbines are supplied. This permits variable speeds often required.



At right . . . Two-speed geared with diesel engine or two-speed motor drives are popular for cargo loading where necessary to pump oils of varying viscosities, or to pump out a cold line.

Note the few operating parts. High capacity roller bearings and rotors, and over-size shafts, are features for which these pumps are noteworthy.



RP3-1

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WORTHINGTON

WORTHINGTON PUMP & MACHINERY CORPORATION • GENERAL OFFICES: HARRISON, N. J.

have repeatedly stated that they wanted the Oil Industry to manage and conduct its own activities to the greatest extent possible. In their wise understanding of the background and history of the California Oil Industry and its problems, they are now endeavoring to put into the hands of the Oil Industry in California the freedom to live up to their traditions to manage their own affairs with the minimum amount of outside control—briefly, decentralization. I want to strongly emphasize to you that when you ask and receive this freedom, you, at the same time, must take upon your shoulders the obligations and responsibilities which go with it. You must do the job better than it has ever been done before—better than anyone else could do it. I have great faith in your doing just that. I know you have the ability and heart and the guts to do a great job in a great crisis.

I do not need to tell any of you about the importance of oil in this war nor of the important part which California oil will play in the coming war of the Pacific.

I cannot tell you in terms of barrels how much oil will be needed but I can say emphatically that we must be prepared to supply more oil than we have in sight now. Mr. Ickes has recently said that the demand for oil may be doubled or trebled. I repeat, we must be prepared. There have been tragic examples of unpreparedness and we must be ready when the day comes and your country calls upon you. It would be a sad and humiliating day for every one of us if we failed in not having done everything within our power to take care of our part in the fight.

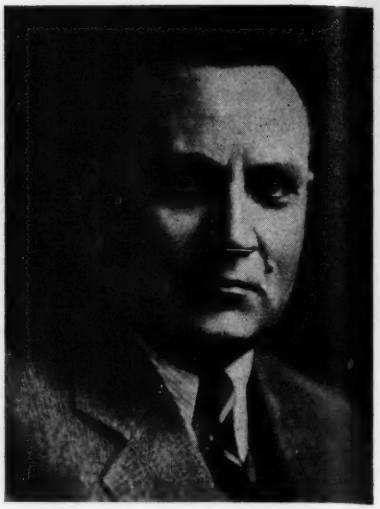
Perhaps a little prematurely, I will tell you that Mr. Davies has instructed that a new M-68-3 should be issued which will give wide freedom for the drilling of new wells. Everyone here knows that it is imperative to develop more reserves of oil in California. That can only be done by drilling more wells. This is exactly what I meant before about responsibility. This job of getting the oil has been turned over to you—you have to do it. I hope it will bring the largest drilling programs that California has seen in many years. Everyone knows there are manpower difficulties—although I am informed that this situation is and will be relieved —economic difficulties and all kinds of difficulties. But when have we not had difficulties, and who has ever accepted them as an alibi?

We must have more reserves and more oil in sight, and you oil men of California know better than anyone how to get it. You have a proud record of getting oil when it was needed. You certainly do not want to call for help when the fight comes to you. Mr. Ickes and Mr. Davies, who are closely in touch with the national and military requirements are greatly concerned over the fear that California will not have the necessary oil at the time it will be required and that we here are not getting ahead fast enough with our drilling to develop greater reserves and get more oil in sight.

The P.A.W. will do everything within its power to assist you. We want to help you. We want you to tell us what we can do to be of service to you.

I want to again speak about the A.P.I. It is my firm belief that as the A.P.I. was born out of the last World War, it will come out of this World War a greater and more effective organization than it has ever been before. We will have learned much about the larger benefits of cooperation in developing our fields, in transportation, in manufacturing and in distribution. No one will want to lose any of this gain and the A.P.I. will be the organization and forum where this good work can be carried forward. You hear everywhere of post-war plans—that should be one of our first post-war plans.

The papers presented by Messrs. Lapham and Babcock will appear in our next issue.



Lawrence Vander Leck

Cal. Man Named Director of Oil Production in West

The appointment of Lawrence Vander Leck, one of the West's outstanding independent oil producers, as Director of Production for District 5 of the Petroleum Administration for War was announced on March 8th at Washington by Deputy Administrator Ralph K. Davies.

He succeeds in this post Commander W. H. Osgood, who has beeen called to active duty by the United States Navy. District 5 includes the states of Arizona, California, Nevada, Oregon, and Washington, as well as the territories of Alaska and Hawaii. PAW operations for the area are under the general direction of Herbert R. Gallagher, district director-in-charge.

Mr. Vander Leck has been long and actively connected with the petroleum industry of California. A graduate of the University of California, the new production director began his oil career as an oil field geologist, later joining the old California State Mining Bureau as a geologist and petroleum engineer. While with the Bureau he surveyed and mapped the prospective oil fields of California, forecasting many of the petroleum producing areas which have since been discovered. Vander Leck is a native

(Continued on Page 31)

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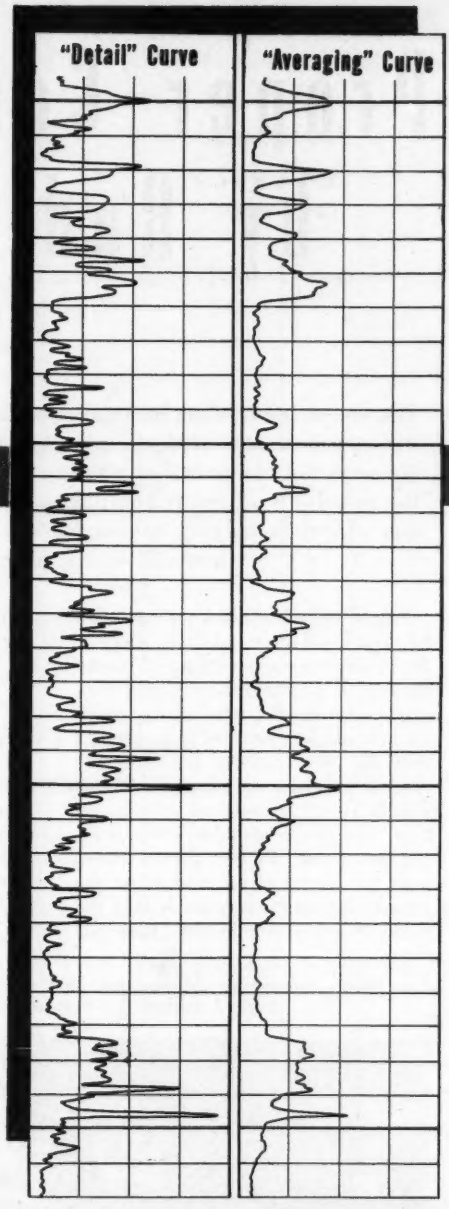

THE "DETAIL" CURVE

The "Detail" Curve measures the resistance of the formation within a small sphere surrounding a single electrode. Being the most confined measurement it provides the maximum possible detail or response to thin formation. In conjunction with Electrolog's accurate measuring device, this curve indicates the precise depth of all formations from six inches up in thickness. This high degree of response makes possible the correlation of small changes in long shale sections where such correlation would otherwise be impossible.

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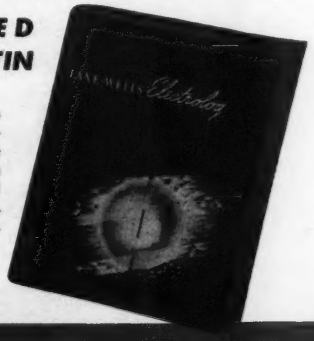

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Proper Completion Assured by Radioactivity Logs

By

JOHN J. NEALE

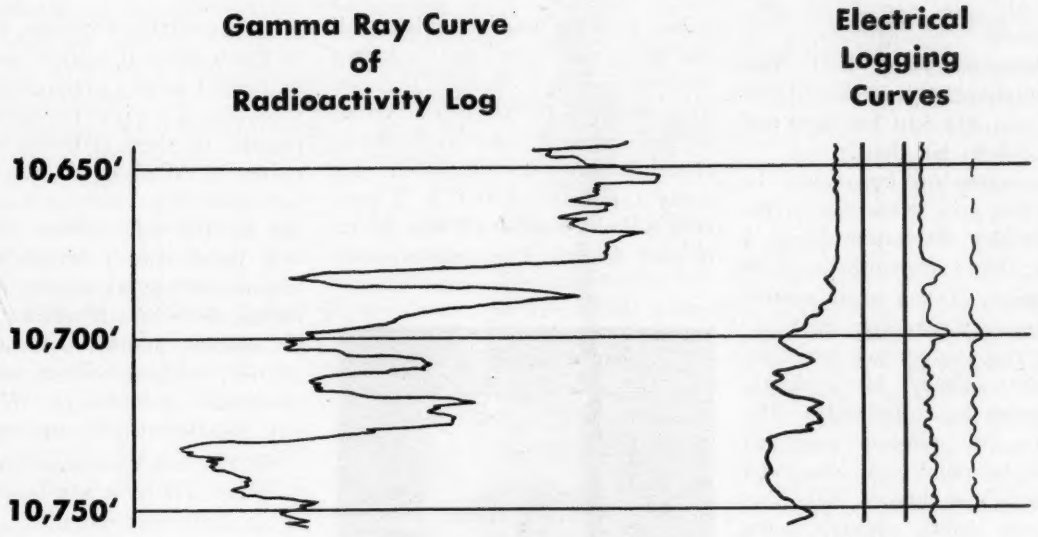
The use of the Gamma Ray Curve of the Radioactivity Log in checking measurements after the pipe has been set and before the well is completed has provided a safety measure that eliminates entirely the possibility of faulty completion because of variation in drilling and electrical logging measurements. It frequently results in a material saving to the operator.

An oil well is a big invesment and when subsurface conditions make it desirable to cement a string of casing through a productive zone and then gun perforate for production, every care should be exercised to make sure that the perforations are properly placed in order to secure the full benefit from this method of completion. Measurements taken while drilling or coring do not always check with the electrical log and when the actual oil-bearing stratum is thin the error of a few feet in the placement of the production shots may make the difference between a successful and unsuccessful completion. This is particularly true where water is adjacent to production and will then make another squeeze job necessary in addition to the second gun perforating job required to get the desired production. Moreover, gun perforations that sometimes have to be made for squeezing off bottom water effectively must be placed accurately if the job is not to be done over.

Lane-Wells measuring sheaves are part of the assemblies that are regularly checked against the constant depths of test wells.

To insure the proper placement of gun perforations when there is a question as to the exact location of the oil-bearing stratum or the water to be squeezed off below, some operators are running a Gamma Ray (Radioactivity) Log before doing any gun perforating at all. Radioactivity Logging provides a means of logging through casing by running a highly sensitive detector into the well on a conductor cable to measure the gamma rays that enter the hole from the contiguous formation. These rays, originating in the formation, pass through the casing and cement and identify, by means of their relative measurements, the character of the formations behind the casing. The instrument run into the well consists of an ionization chamber above which is an amplifier. An ionization current produced in the chamber by the gamma rays is amplified and transmitted up the conductor cable to recording equipment at the surface, where it is further amplified to actuate an automatic pen recorder which traces a Gamma Ray Curve. From this curve formational conditions are interpreted and their depth accurately determined.

In a field situated on the banks of the Mississippi River a few miles below New Orleans the use of the Radioactivity Log has become standard practice. The majority of the wells here are directionally drilled holes that are deflected toward the river. The producing sands are relatively thin and in almost every well it is necessary to perforate and squeeze the bottom of the sand before a production test is made in order to insure an effective water shut-off.



Logs Correlated and Corrected to Pipe Measurements

In this field measurements made while drilling to the tops and bottoms of the sands usually differ from electrical log measurements by 3 to 6 feet. A Radioactivity Log is therefore run after the casing has been set and all squeeze and production gun perforating is done on the basis of data furnished by the Radioactivity Log. It has been found that by running the Gamma Ray Log after casing has been set and cemented, the squeeze shots can be positioned in exactly the right place the first time, thereby saving a squeeze job. This more than offsets the cost of running the Radioactivity Log.

In another field in the Gulf Coast Area a well was drilled through the producing sand to a depth of 10,200 feet. This sand carried water and it was desired to gun perforate only 4 feet for production. The drill pipe was measured carefully when coming out of the hole just prior to electrically logging, but when the electric log was run it measured the bottom 4 feet shallow. The casing was then run. Since the perforations to be made for production were to be limited to a designated 4 feet it was necessary to make absolutely certain that the holes were shot at the proper place if additional squeeze and perforation operations were to be avoided.

A Radioactivity Log was therefore run in the cased hole and the location of that part of the sand which it was desired to perforate was accurately determined from the Gamma Ray Curve. Utilizing this information the production perforations were shot immediately after the Radioactivity Log was run and pipe line oil was recovered. The Gamma Ray Curve is believed to have saved the expense and bother of a squeeze job as well as to have given the needed assurance that the job was done right.

An extension test was recently drilled at another field. The field office of the company drilling the well pronounced it dry and recommended that it be abandoned before pipe was run. An electrical log of the hole showed a 10-foot sand and from the cores it appeared that this sand was carrying water, oil and gas. The main office was desirous of perforating a 2-foot section just above the water and just below the gas to test for production; so orders were issued to run the casing. The total depth of the well as measured when drilling was 10,865 feet and perforations were made for squeezing off the bottom water on the basis of the pipe measurement.

The question of where to place the shots for the production test was, however, complicated by a disagreement of measurements. The core records placed the top of the sand at one depth, the pipe record at another and the electrical log at a third. To make sure, a Radioactivity Log was run and a perfect correlation was found between the electrical log and the Gamma Ray Curve. With the assurance given by the Gamma Ray Curve and disregarding the bottom measurements, it was determined that the top of the sand was 28 feet off bottom and the perforations were made accordingly. Salt water was recovered. Another test was made in another sand that was even less promising with no better results. The well was abandoned.

There have been numerous Radioactivity Logs run in this area for the purpose of checking measurements; and good correlation has been obtained in every case. With such correlation the Gamma Ray Curve gives added assurance that the subsurface data are reliable; and it provides a sure means of placing the perforations just where they are wanted.

Functions of the Materials Sub-Committee

By Leo S. Busby

"Washington? What do I think of Washington?" Bill Beck repeated my question. He relit his cigar and settled back in his chair.

"I was there for five days," he said, with a grin. "One day in the lobby of the Mayflower Hotel I met a business acquaintance from Los Angeles. He's a manufacturer and had spent three weeks in Washington trying to contact a certain government agency. He evidently had experienced considerable difficulty. To the question you just asked me, his reply went something like this: "You know, Bill, this is the only lunatic asylum in the country where the inmates run the place." Of course, that's just one disgusted man's opinion, and inasmuch as I personally was there by appointment, my own impressions of the city were considerably milder than that."

We were in Bill Beck's office in the Higgins Building, where Bill is Manager of Purchases for the General Petroleum Corporation. Bill is also president of the Los Angeles Purchasing Agents' Association, chairman of the salvage committee for his company, and chairman of the recently organized District No. 5 Materials Subcommittee. After trying for nearly a week to sandwich in this interview, I decided to get immediately to the point while the getting was good.

"This Materials Subcommittee, "I asked, "Just where does it fit into the picture?"

Bill considered for a moment.

"You understand, of course, the general set-up. Briefly, the picture is this. Under present war conditions, the entire petroleum industry is under the direction of the government agency known as the Petroleum Administration for War. Harold Ickes is the Petroleum Administrator, with Ralph K. Davies as deputy.

"Some months ago the nation was divided into five petroleum districts, number five comprising all the west coast states and including Arizona and New Mexico. In order to co-ordinate the various activities of the industry, and to facilitate closer co-operation between the many companies within it, a general industry committee was set up in each district. Each general committee then appointed five subcommittees which take their names from the particular activity they are designed to handle, that is, Production, Refining, Natural Gas and Natural Gasoline, Transportation, and Marketing. Membership in all committees was chosen from men now actively engaged in some phase of the industry."

E. W. Beck

"But you haven't mentioned the Materials Subcommittee," I protested.

"No, I was coming to that, "Bill answered. "Materials seem to have been something of an after-thought. The oil industry, even in normal times, is a consumer of tremendous quantities of iron, steel, rubber and other commodities. Under war conditions these have all become critical materials. From time to time it becomes necessary for the government to have statistics on all vital materials, available amounts on hand, where it is, how much will be needed in any given period, and so on. It all fits into the overall war picture. As these statistics were required by Washington, the various subcommittees were obligated to dig up the information. As a result there was considerable confusion and a great amount of duplication. It was, therefore, decided to appoint another subcommittee whose particular concern would be materials. Accordingly, the Materials Subcommittees were formed."

Bill discarded his cigar and filled his pipe. He lit it and leaned back in his chair once more.

"Now, as to the specific functions of the Materials Subcommittee," he went on. "Shortly after the organization of our subcommittee a letter was received from Deputy Administrator Davies outlining in a general way the potential functions of the Materials Subcommittees in all districts. It was to clarify these functions, and to determine definite methods of operation, that a meeting of the Materials Subcommittee chairmen was called in Washington in January."

"Wasn't it at your request that this meeting was called?" I asked.

"Well, yes," Bill answered. "Our subcommittee felt that, if we were to act with any degree of efficiency, we would have to have more specific information as to what was expected of us."

"And did the meeting in Washington clear up that point to your satisfaction?"

"Yes, it has given us a definite basis to work on. The primary purpose of the Materials Subcommittees is to aid in insuring, through the PAW, an adequate flow of materials to the petroleum industry to enable it to conduct production, refining, transportation, and marketing operations which are an essential part of the nation's war program. This is to be accomplished by what I might call our "five point"

program. These points were given to us by Mr. Davies in his original letter of instructions, and were enlarged upon at our Washington conference. Perhaps I had better give you first the exact wording of the "points" as we received them and then the clarification as worked out in Washington.

"1. The survey, analysis, and correlation of the material and equipment requirements of each branch of the petroleum industry in each district by quarters, so as to advise and assist the PAW in obtaining the necessary allotment of materials and in distributing such materials in the most effective manner.

"In this connection, it was concluded that when the Materials Division, or one of the other operating divisions of PAW, required specific information on a certain item of material or equipment, a survey would be conducted by the Materials Subcommittee. The normal procedure would be for the PAW to outline the information required and send the request to the Materials Subcommittee. The Materials Subcommittee would function in close harmony with the Production, Refining, Natural Gas and Natural Gasoline, Transportation, and Marketing Subcommittees of the General Committee. The majority of the information on requirements of materials and equipment would be obtained by the Materials Subcommittee through the other functional committees working in co-operation with the Materials Subcommittee. The Materials Subcommittee would act as a co-ordinating committee to initate the making of surveys, and to consolidate figures and information involving material, its uses and requirements. Information, records, or figures would be forwarded to the Materials Division of PAW by the Materials Subcommittee for use in supporting requirements for materials to be used by the petroleum industry during a determined period of time. By routing all requests for materials information through this subcommittee a great deal of duplication will be avoided.

"2. The survey, analysis, and correlation of data relating to the supplies of materials that are available in inventories or from suppliers, or which may be reclaimed and reused.

"As regards this point, the proposed petroleum industry surplus materials reporting and redistribution plan was discussed, and it was brought out that whole-hearted and honest co-operation in reporting under this plan would assist materially in balancing stocks and maintaining an adequate supply of material for essential petroleum industry operations. Coordination and exchange of ideas between industry operators through the Materials Subcommittee and with the PAW district offices will greatly assist in maintaining adequate but minimum stocks of materials in the hands of operators and suppliers. The findings and recommendations of the Materials Subcommittees in this direction were promised serious consideration by the PAW in Washington.

"3. To study materials and equipment currently being fabricated to the end that substitution of less critical materials may be effected and standardization in type and design may be achieved wherever feasible, and to make appropriate recommendations to the PAW relating to such substitution and standardization.

"It was suggested that Materials Subcommittee members take advantage of every opportunity to urge industry operators to co-operate in standardization programs in order to simplify manufacturing practices which would indirectly result in increasing the manufacturing capacity and in turn the production of war products by manufacturers. The Materials Subcommittee is expected by the PAW to render valuable assistance in promoting standardization practices and in discouraging the use of special materials and equipment.

"4. To advise with the district and Washington offices of the PAW, with the industry committees and sub-committees, and with the oil operators regarding the efficient distribution of materials and equipment for essential uses in the various branches of the petroleum industry.

"This point covers a very highly important function of the Materials Subcommittee, in that this subcommittee is expected to keep the PAW informed as to growing scarcities of certain items of material, or potential critical conditions resulting from potential or actual shortages of certain items. The stocks of some items are being rapidly depleted and if these are not replaced and maintained there will be a loss in the production of oil. Advance information on these critical conditions will assist the PAW in maintaining adequate stocks of materials to protect petroleum industry operations.

"5. To develop plans and programs for the redistribution of such materials and equipment as may result from the activities of other committee groups, and, upon approval of the PAW, to supervise such redistribution activities.

"The Materials Subcommittee will act in a coordinating capacity in assisting the PAW and petroleum industry operators to use and distribute surplus and idle material. The Material Subcommittee is expected to encourage industry operators to make surplus or idle material and equipment and facilities available for purchase and use by other industry operators, or if there be no ready market within the petroleum industry, to offer them for purchase and use by other war industries. Suggestions and recommendations along these general lines will be made to the PAW by the Materials Subcommittee from time to time.

DIFFICULT DRILLING PROBLEMS SOLVED WITH

MICATEX

One of the most difficult of all drilling problems is encountered in drilling through loose, creviced or fractured formations heavily charged with gas. Unless the drilling mud has adequate weight, the well may blow out. (See Fig. 1.) This weight which is necessary to hold the gas pressure may be great enough to cause loss of circulation in the permeable formation. (See Fig. 2.) Providing adequate mud weight to control pressures and not thereby lose circulation was an extremely difficult problem until MICATEX was introduced to the oil industry.

MICATEX seals the walls of the formation and helps prevent loss of circulation. (See Fig. 3.)

This ability of MICATEX to help prevent blowouts and lost circulation is proved in the following drilling problem encountered in the Gulf Coast. A well at 9447 feet struck a loose, high-pressured gas sand and attempted to blow out with a mud weight of 11.7 pounds per gallon (88 pounds per cubic foot). The mud weight was increased, but when it reached 12.2 pounds per gallon (91 pounds per cubic foot) circulation was lost. The well was shut in and MICATEX was added at the rate of 5 pounds per barrel to a pit of mud weighing 12.5 pounds per gallon (94 pounds per cubic foot). This mud was then pumped into the hole, and indications showed that circulation was re-established soon after the MICATEX-mud left the drill pipe. Weight was then raised to 13.8 pounds per gallon (103 pounds per cubic foot) with no further loss of mud.

The well was drilled to 9651 feet with no additional trouble. At this point casing was run and the operators reported that the well "was so satisfactorily walled-off that the pipe didn't touch a thing." During the cementing operation full mud returns were obtained the whole time the 16-pound-per-gallon slurry was being run, further indicating the ability of MICATEX to provide an effective mud seal and a clean hole.

MICATEX, and all the other Baroid Products, take troubles out of drilling.

BAROID SALES DIVISION

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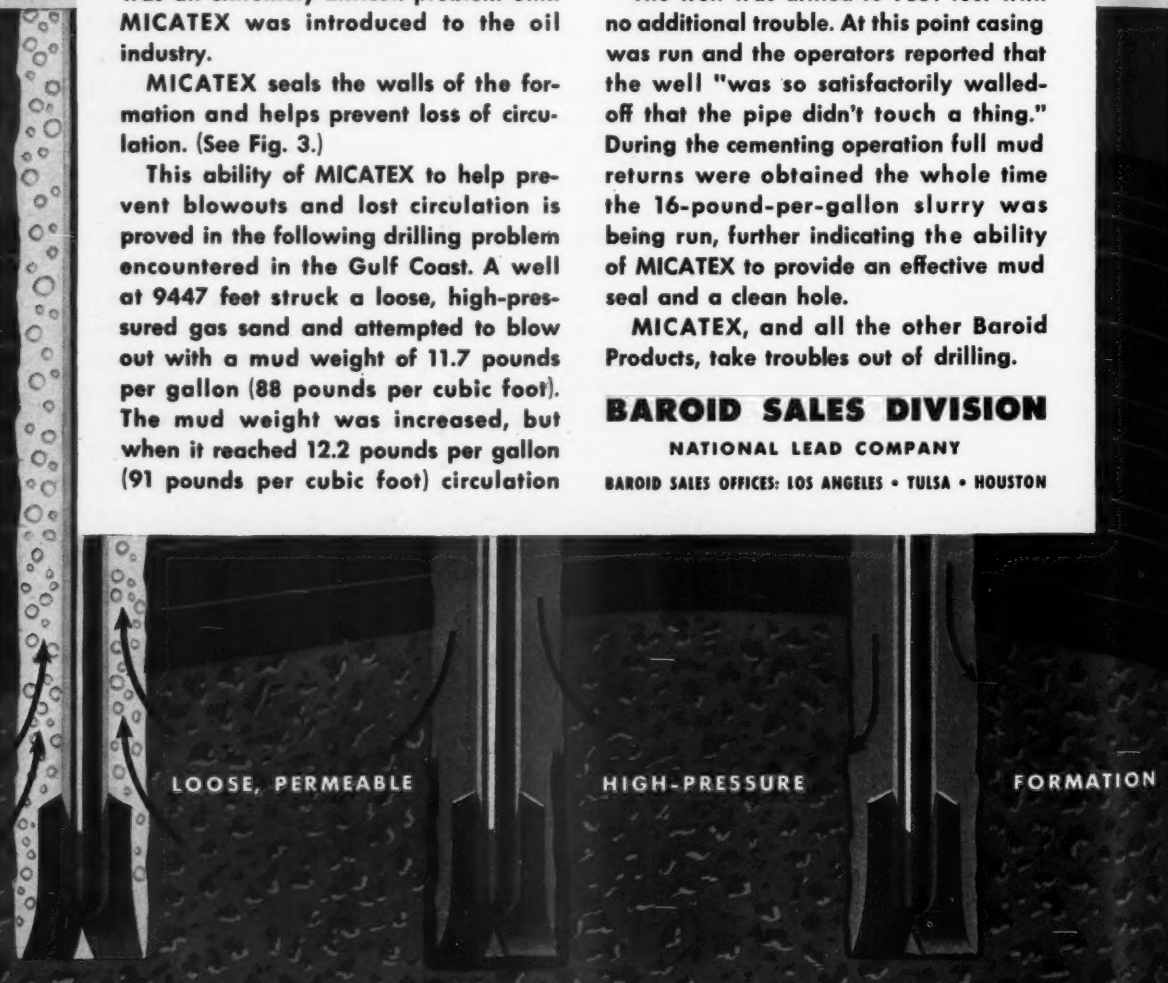


Fig. 1. Fig. 2. Fig. 3.

BAROID PRODUCTS: BAROID AND COLOX, AQUAGEL, FIBROTEX, BAROCO, STABILITE, AQUAGEL-CEMENT, SMENTOX, ZEOGEL, IMPERMEX, MICATEX, TESTING EQUIPMENT, BAROID WELL LOGGING SERVICE

"And that, I think, just about covers the functions of the Materials Subcommittee."

Bill's secretary appeared at the door. He nodded to her, and knocked the ashes from his pipe as he stood up.

"Sounds like a he-man assignment, Bill," I remarked. "Hope you've got some he-man help on that committtee."

"You bet I have," he answered, emphatically, pulling on his raincoat. "I'll have my secretary give you a list of the members. But now, I've got a luncheon date at the Elk's Club, and I hear they're serving steaks. I'd hate to miss it."

The District No. 5 Materials Subcommittee is composed of the following members:

E. W. Beck, Chairman, and Manager of Purchases, General Petroleum Corporation.

H. H. Kelly, Vice-Chairman, and Purchasing Agent, Richfield Oil Corp.

E. H. Weaver, Secretary, and Purchasing Agent, Union Oil Company.

Philip Hauck, Purchasing Agent, The Texas Company.

Lyman Waters, Purchasing Agent, Standard Oil Company of California.

Sidney Covell, Purchasing Agent, Shell Oil Company.

A. P. MacKillop, Purchasing Agent, Tide Water Associated Oil Company.

Maurice A. Machris, Vice-president, Wilshire Oil Company.

J. A. Crawford, President, Youngstown Steel Products Company.

Harold Howard, Howard Supply Company.

Dana Hogan, President, Hogan Petroleum Company.

Junior Members of the Southern California Section, A.I.M.E.

"Washington and the Oil Industry" was the subject of discussion at the March 4th Junior A. I. M. E. meeting, held as customarily at Coles' Cafeteria in Huntington Park. Some thirty engineers comprised an audience which was privileged to hear Mr. A. C. Rubel, Vice-President in charge of Production, Union Oil Company, present in informal manner his viewpoints upon the pertinent subject of Washington's influence, handling, and policy regarding the petroleum industry. Mr. Rubel, after emphasizing the tremendous magnitude of the government's undertaking, explained in some detail the organization and function of different branches of the Petroleum Administration for War. He then outlined various stages through which applications for exception to Conservation Order M-58 must necessarily pass in course of processing. Criticisms of superfluity of red tape, and lack of experienced oil men in many subsidiary positions, appeared justified and well-founded. However, Mr. Rubel did commend the efforts of many capable, conscientious officials (those who had no intention of perpetuating themselves in office, many of whom had accepted their positions at considerable financial sacrifice) who were devoting their time and ability to the prosecution of a tremendous undertaking.

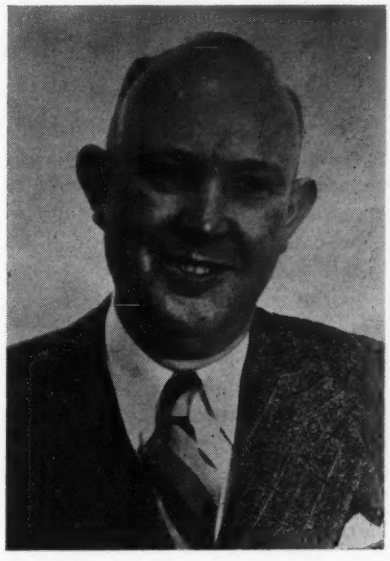
Mr. Walker Clute, Secretary of the Senior Chapter of the local A. I. M. E. Section, was introduced to the audience following Mr. Rubel's talk. Mr. Clute commented on his experiences and reactions while attending the recent national A. I. M. E. meeting in the East.

Prior to adjournment, Chairman Turner announced that at the April 1st meeting of the Junior Chapter, Joseph Jensen and L. E. Porter, Chief Petroleum Engineers of Tide Water Associated Oil Company and Richfield Oil Corporation, respectively, would discuss the topic of curtailment—past and present. The attendance of all interested parties is invited.

Engineering, Technology, latest news—twice a month in California Oil World.

R. K. Rowell Appointed Manager at El Segundo

Richard K. Rowell, who began his oil career as a still cleaner, has been appointed manager of the El Segundo refinery, succeeding the late H. C. Hanna, it was announced by the Standard Oil Company of California.



R. K. Rowell

It was in 1917 that Rowell was employed as still cleaner at the Company's Richmond refinery. A few months later, however, he was abroad in World War I, serving with the U. S. Army's 224th Aero Squadron.

Returning to Richmond in 1919, Rowell soon became foreman of the Filter Plant, and thenceforth advanced steadily through various supervisory positions in the manufacturing department. In 1934 he was transferred to El Segundo as superintendent of the Pressure Stills, retaining the title he had held for six years at Richmond. Subsequently he was named refinery superintendent and in 1940 was appointed assistant manager, continuing in the latter position until his recent elevation to fill the vacancy caused by the untimely death of Hanna.

Rowell, 49, has been associated with the petroleum industry for almost thirty years.

The Why of Water Treatment

By J. P. SCHALLER

Adams Manufacturing & Engineering Co.
Presented before California Natural Gasoline Association
March 4, 1943 Monthly Meeting

This paper is not intended for scientific ears, but is intended for men in the field who are actually operating boilers without benefit of chemical education along those lines.

In the treatment of boiler waters we are dealing with certain chemical compounds in the water and the chemicals found in the prescribed treatments. Of course one must have the correct material to start with, otherwise, all our efforts will be in vain. Assuming that we have started with the right treatment the use of chemicals necessitate certain anaylsis and their correct interpretation after we have made our tests. The important things, however, are the knowledge of scale formation and to have analysis simple enough so that any operator in the field can interpret these analysis in terms of what he does to obtain the results he wants.

It is not the purpose of this paper to dictate what analysis nor what material should be used. I will merely try to give you in as simple terms as possible some of the various reactions that go on inside of the boiler to form scale and some of the easier ways to prevent scale.

Generally speaking, there are three difficulties usually encountered in boiler water. The first is scale formation; the second foaming or priming, which, of course is the direct cause of sticking steam valve, clogging non-return steam valves or regular valves, etc; the third is corrosion or pitting. The basic purpose in water treating is to produce water conditions in the boiler that will not permit any of these difficulties to occur.

Consider scale formation first. Scale is caused by certain calcium salts precipitating out of solution in the boiler and adhering to the walls of the tubes and shell and building up scale much the same as concrete is made. We all know that a rich mixture of cement in sand will produce an extremely hard concrete, and on the other hand a lean mixture of cement mixed with a rich amount of sand and gravel makes an extremely porous and easily broken concrete. A very little calcium may combine with Silica to make a little calcium silicate scale that is so hard and so dense that it is almost impossible to get the scale off and is one of the best insulators known.

On the other hand, a lot of calcium and a lot of magnesium, some organic matter and some common ordinary dirt, will produce a great bulk of scale in the boiler, but the porosity of the scale will be such that water can actually penetrate to the hot metal and prevent tube burnings, even though the scale is five or ten times as great in quantity as it was in the case of the calcium silicate. It is therefore plain that it is not a question of the amount of scale, but the type of scale and density of scale that is our chief concern.

There is only one thing that ties this scale together, however, and that is calcium, and it is no more possible to produce scale without calcium than it is to produce concrete without cement. Actually, a worse scale condition may be formed under certain circumstances by removing 90% of the calcium than by not taking out any of it. In order to make this clear, consider a few of the phenomena surrounding calcium in boilers.

Calcium in a raw water comes in one of three forms either as calcium bi-carbonate, calcium sulphate, or more rarely as calcium chloride. In addition to the calcium salts, the same salts may be tied up with magnesium such as magnesium, bi-carbonate, magnesium sulphate, magnesium chloride and possibly silica. These are the only salts that have any bearing on scale formation. Now, water goes into the boiler and steam comes out, but the mineral solids are left behind. These mineral solids continue to concentrate.They were in solution when they went into the boiler, but as they concentrate some of them reach their saturation point, beyond which no more can be held in solution and consequently the solids go out of solution and adhere to the metal as scale. Again, the temperatures in the boilers change the form of some of these salts and cause them to precipitate. For instance calcium bi-carbonate under the influence of heat breaks down to liberate CO-2 gas and changes to calcium carbonate. The calcium bi-carbonate is quite soluble but the calcium carbonate is very nearly insoluble, and so almost all of the calcium carbonate precipitates as a sludge or mud. Calcium carbonate ordinarily does not produce scale—it produces mud. It only produces scale when the mud is allowed to accumulate on hot metallic surfaces where it gradually bakes on the tube or shell.

Calcium sulphate is one of the true scale forming salts, and is usually the cement of the boiler scale mixture. Each time one molecule of calcium sulphate goes out of solution it does so at the point of contact between the water and the hot tube, and it immediately forms a crystalline deposit on that tube. This crystalline deposit may tie into itself the calcium carbonate sludge and precipitate magnesium salts, silica or organic matter and it does increase the volume of scale but as stated before it decreases the density of the scale. Now if these points are definitely understood, a little better picture is produced of what hap-

pens when scale is formed, and what must be done to prevent scale. To make this clear, let us summarize these fundamental points. Technically, scale is formed—en situ— and only from calcium sulphate. That means that as the water evaporates at the metallic surface each molecule of calcium sulphate that was in the water immediately fuses on to the metallic surface as scale. This calcium sulphate may also cement calcium carbonate sludge and other things in its fusing process. The calcium carbonate goes out of solution as soon as it changes from the bi-carbonate to the carbonate. This phenomenon is accomplished in the body of the water and so sludge is formed in the body of the water. The sludge of itself cannot produce technical scale, but it may be cemented together by the calcium sulphate.

On the other hand, calcium carbonate sludge may accumulate on a hot surface and gradually bake to a point where to all intents and purposes it actually is scale. The important difference however is that if we can coagulate the calcium carbonate to prevent it from settling it will not produce scale or baked mud. On the other hand, no amount of coagulation will prevent the calcium sulphate from forming scale, since each molecule forms scale the moment it goes out of solution at a metallic surface, and it does not go out of solution until the water changes to steam at the metallic surface. This is the most important difference between the two salts and it is the real fundamental reason why certain organic compounds will prevent calcium carbonate from baking on a tube, but will no wise prevent calcium carbonate scale. In other words, such commerical products are purely wildcat compounds and their use is recommended without any basic understanding of the laws governing scale production.

Now consider the question of silica. Silica does not form scale itself since it is more soluble in the alkaline boiler solution than it is in the comparatively non-alkaline raw water. Silica will combine with magnesium if there is sufficient magnesium present, in which case a flocculent non-scale forming magnesium silicate is produced. In the event there is not sufficient magnesium the silica will combine with calcium to produce a calcium silicate which is practically insoluble and which will form another true scale of great density. The only way to precipitate silica is by acidifying the solution, in which case the silica precipitates as silicon dioxide and does not produce scale.

Obviously we cannot produce acid conditions in the boiler since that would produce corrosion and so that method of removing silica is out of the question. The only method available, then, involves the presence of magnesium, also some research has beeen done that tends to prove that sodium aluminate will react with silica to produce a non-scale forming, insoluble sodium aluminate, silicate or a zeolite. Theoretically, this is true, but practically it lies in having sufficient sodium aluminate in the boiler to react with the silica since normally sodium aluminate reacts with magnesium first, and will not react with the silica until all other magnesium is formed into a magnesium aluminate.

It is of course possible to use sufficient sodium aluminate so that a residual soluble aluminate will always be maintained in the boiler and calcium scale thereby prevented. One of the primary difficulties in this method is the complexity of the analytical means of determining the residual aluminate. This method is rather long and involved and is not easy to perform without a fairly complete laboratory.

Considering the above facts the preferable method is to leave the silica alone, and since we have to remove the calcium anyway, we generally remove all of the calcium so that it cannot combine with the silica and thereby prevent calcium silicate scale formation.

Now since calcium sulphate is one of the primary scale forming elements obviously the first objective is to eliminate calcium sulphate from the boiler water. This can be done by pre-softening before it goes into the boiler with either lime-soda ash or zeolite, thereby removing most of the mineral solids from the water. Even if that is done all of the mineral solids are not removed and some of them will go into the boiler. In the final analysis the only difference that pre-softening makes is to decrease the amount of salts that will have to be taken care of inside the boiler. The actual efficiency of the treatment is determined by the actual conditions inside the boiler.

Now it was stated above that it is desirable above all things to get rid of the calcium sulphate and this can be done in several ways. If soda ash or sodium carbonate are put into the boiler water the soda ash will react with the calcium sulphate to produce highly soluble sodium sulphate and sludge forming calcium carbonate. This eliminates the calcium sulphate but as stated before it produces calcium carbonate which will bake on to a hot tube and still cause trouble. Of course certain coagulants might be added such as sodium aluminate, aluminate sulphate or organic coagulants, which supposedly adhere to the carbonate to leave it in a light fluffy form so that it cannot settle and bake on to the tube. The one objection to that method is that there is no positive way of knowing whether there is enough coagulant in the water.

The purpose of the coagulant is to produce a precipitate light enough so that it will not settle but will circulate with the movement of the water in the boiler. Plainly then, the greater the velocity of the water the less coagulant will be needed since the higher velocity will tend to move a heavier body than will a low velocity. Unfortunately boilers do not operate at the same rating and so the

question of how much coagulant to add for any given operating condition is difficult to answer. Treating with soda ash and coagulant leaves a lot of guess work and not enough of the method can be controlled by definite analytical means.

We have also found that calcium sulphate can be precipitated by the use of sodium phosphate in some form or other. This produces calcium phosphate instead of calcium carbonate and fortunately calcium phosphate will not cement together no matter how hot the surface becomes. Any calcium bi-carbonate that goes into the water can be precipitated as calcium phosphate in the same way and thus we do not get any calcium carbonate at all. We should use some coagulant in any event so that an undue amount of mud is not accumulated in the boiler. It is important to note however, that the formation of scale is in no wise dependent on the coagulant, but it is entirely dependent on the production of non-scale forming calcium phosphate.

By using the phosphate method one very definite thing is accomplished, the necessity for guess work is eliminaed, and this method is subject to definite control. Calcium phosphate is utterly insoluble and the reaction is quick and complete, and if we have enough residual phosphate in the water in a soluble form we know that calcium carbonate or calcium sulphate cannot exist.

One of the troubles with the soda ash method is that the only reasonable way to determine whether enough soda ash has been added to the water is to find out the amount of calcium that is left in solution in the boiler. One of the simplest ways is the so called soap hardness test. This test, however, is inaccurate in alkaline solutions and almost invariably boiler waters are alkaline. However, if the phosphate method is used the soluble calcium salts will be the first to react with the phosphate, thus eliminating the chance of scale and providing a means of quick and easy analysis for the soluble phosphate by using one of the many phosphate determining kits now on the market.

Experiences prove that less than 15 parts per million of phosphate as PO-4 in solution will tend to form scale. The maximum of phosphate allowable should be determined by the conditions existing in the boiler. It is a rare case where more than 25 parts per million of phosphate as PO-4 is required, however such cases do exist and should be treated as a problem child and the correct dosage of phosphate determined by a cut and try method.

The reason for making the tests is not to fill out some fancy forms or to have a record of the amount of phosphate fed, but rather to be used as a guide as to how much phosphate to feed into the boiler. Now if boiler water is treated 100% correctly one day and 50% the next day some scale is going to be produced. There is only one way to get a 100% efficiency and that is to treat correctly 100% of the time.

No manufacture can change the laws of chemistry. We must conform to them or we won't get results. The manufacturer can advise how to make tests, he can check the operator's tests periodically and tell how to control them, but in the final analysis it is the care and skill of the operator that is going to determine the efficiency of scale prevention methods.

To reiterate; if we have established 25 PPM of phosphate as the correct operating feed and we find with everything being equal that the residual phosphate is 45 PPM the operator will realize that he is over treating, likewise, if the residual phosphate is 10 PPM he will know he is feeding too little phosphate. Knowing that simple thing is all that is necessary to maintain correct phosphate dosage.

Let us consider another angle of boiler water treatment, but at the same time remember that all these angles tie in together, one hinges on another to a definite degree. Let us now consider foaming or priming and its resulting difficulties such as wet steam, clogging of regulator valves, scaling up of super heaters, etc. All of these are the direct result of foaming.

As small boys we probably all blew soap bubbles once in a while. Now the way to make good soap bubbles is to dissolve a lot of soap in the water before proceeding to blow bubbles bu who wants soap bubbles in boilers. When any salt is dissolved in water the specific gravity of the water changes and the surface tension of the water increases. Organic compounds in solution in the water also increase the surface tension. A simple definition of surface tension is the tendency of the water to build up a resistance on the surface. It is exactly the same phenomenon that occurs when we make soap bubbles. In order to prevent scale, alkalies must be put into the water. Sodium phosphate reacts with calcium carbonate to produce calcium phosphate and sodium carbonate. Sodium carbonate partially hydrolizes to produce sodium hydroxide or caustic soda. Caustic soda and fatty acids in oil make extremely good soap. Now remember that steam is formed at the point of contact between a hot surface and the water. Theoretically, this point of contact is either the tubes or the shell of the boiler, but if there are fine granular particles in the water, steam can be formed at the surface of those particles as well. Now if the steam were formed only at the point of contact between the water and the tubes the steam liberation would be around the tubes and the shell, but if there is a lot of suspended matter in the water the steam liberation is carried on through the entire volume of the water. Steam is a gas and as this gas is liberated from the volume of the water, to go up to the steam area of the boiler, it is hindered to a certain extent by the surface tension of the water.

Now when the surface tension

gets high enough the steam escapes from the water in bubbles, each little particles of gas being surrounded by a film of high surface tension water and this water may contain and does contain its proportion of solids that were in the boiler water. Thus is produced the phenomenon known as foaming—by a high concentration of suspended matter plus a high surface tension. It is apparent then that to prevent foaming two points must be kept in mind. The surface tension must be maintained as low as possible and the suspended matter as low as possible, consistent with economic operation. All salts do not produce the same amount of surface tension per unit. A small amount of caustic soda and a soap forming oil will produce a lot of surface tension. A great deal of sodium chloride will produce only a little surface tension. There must be some alkalinity to prevent scale, but we do not have to have oil in the water, so one of the first things is to keep oil out of the boiler. The second thing is to keep the total solids in the boiler at a reasonably low concentration. This of course is accomplished through the blow down valve. There is no sense in blowing down a boiler more than is necessary since that costs money in lost steam and wasted fuel, and also reduces the capacity of the boiler. Still, it must be blown enough and that simply means that some kind of control of blow down should be maintained.

Of course every boiler is different and it is almost impossible to predetermine exactly what concentration can be safely carried in any boiler. That depends upon the type of solids put into the boiler and the idiosyncrasies of the boiler itself. One type of boiler will stand a greater concentration than another type, therefore, the only accurate way to determine the correct concentration is to gradually increase the concentration of that particular boiler constantly checking the quality of steam and then determine exactly where the breaking point comes. To be really accurate, that is the proper procedure.

In general however, a cut and try method is permissible. This involves an arbitrary figure by assuming the average boiler can stand between 200 and 250 grains per gallon of soluble solids without foaming. The chemical manufacturer, consulting engineer, or chemist can tell approximately what concentration is safe in any particular type of boiler and water, the rest is up to the operator.

Theoretically a sample of the boiler water should be evaporated to dryness, the total solids weighed, their identity determined and then the total solids maintained in the boiler at approximately the maximum allowable concentration. That means that the blow down schedule whether continuous or intermittent should be adjusted to keep the total solids low enough to prevent foaming and still high enough to eliminate unnecessary economic loss. As previously stated, the thereotically correct way of determining solids was by evaporation, but since evaporation takes twelve hours the operator would be finding out what was wrong a long time after the trouble occurred, and that would be too late. Moreover, the method is involved and more equipment is required than most gasoline plant operators have at their disposal. Fortunately the rate of concentration of total solids is in direct ratio to the rate of concentration of the chloride ion. This can be determined very quickly and very easily wtih standardized silver nitrate test solution and potassium chromate indicator. The whole test can be run in a few minutes and then all that is necessary to know is the factor between the chloride and the total solids. The operator's research laboratory or the chemical manufacturer can make evaporation tests to determine the factor of chlorides to total concentration. All the operator then has to do is to multiply his chloride test by his factor to get his total solids. After that all that is required is to regulate the blow down to keep the total solids at the desired point, thus eliminating and controlling definitely any foaming tendency found in his particular boiler.

As stated above each phase of water treatment hinges on another phase. Suppose that the operator is using phosphate and has made his phosphate and chloride tests and finds the phosphate below his limits, and the concentration too low. Ordinarily one might say that he should increase his phosphate and decrease his blow down, however, the more water blown out of the boiler the more water must be put into the boiler and when water is blown out of the boiler phosphate will be blown out with the water. It is quite possible that the low phosphate concentration was due to too much blown down and once the blow down is reduced there might be no need of increasing the phosphate at all. It has been made clear that the more chemicals blown out of the boiler the more that must be put into the boiler and so a low phosphate reading does not of necessity mean that more phosphate must be added. That can only be determined by taking the concentration as well and finding out if there actually is too little phosphate or if the trouble is that it is being blown out too fast. The phosphate must be correct and it should have with it a reasonable amount of coagulant so that calcium phosphate will not build up out of proportion. It will be seen, however, that the coagulant is not an absolute factor since it does not have any bearing on the scale formation. It is a secondary factor and not subject to the operator's control, but rather of obtaining the proper material to start with. Therefore, plant control consists of using enough but not too much treatment and blowing down enough but not too much. The only two tests that are required to control these two important factors would be the residual phosphate tests and the chloride test,

Naval Advisors to War Production Field Offices

The following description of these Advisors has been released by the Navy Department:

"Industry Cooperation Division. Industry Cooperation Division of the Navy Department's Office of Procurement and Material is a clearing house assisting in the solution of Navy procurement problems. It maintains a staff of Senior Naval Advisors located in War Production Board Regional Offices, and Naval Advisors located in War Production Board District Offices throughout the United States. The Division also maintains a Washington staff (a) to assist Navy bureaus and offices in the procurement of equipment and materials, (b) to transmit and receive information and otherwise co-ordinate field activities of Naval Advisors, (c) to receive and interview manufacturers offering production facilities to the Navy Department in Washington (thereby eliminating the need for many separate conferences with various bureaus and offices of the Navy Department).

"The Headquarters Office of the Industry Cooperation Division, Office of Procurement and Material is Room 1210, Navy Department Building, Washington, D. C.

"Naval Advisors. In furtherance of the Navy's policy of encouraging prospective bidders to work through the field organization rather than come to Washington, Naval Advisors—representatives of the Industry Cooperation Division —are located in all of the principal War Production Board Regional and Field Offices throughout the country. Manufacturers interested in learning whether their facilities can be employed in the production of naval materials and supplies, either directly or on a sub-contract basis, may consult with the Naval Advisor at the nearest WPB Office, as given below.

Typical activities of Naval Advisors are the following:

(1) Naval Advisors conduct searches for facilities requested by Navy bureaus and offices, Coast Guard and Marine Corps.

(2) Advise manufacturers on methods of obtaining Navy contracts or subcontracts.

(3) Maintain close liason with War Production Board field activities affecting Navy procurement.

(4) Assist Navy Yards, Navy Purchasing Offices and all other naval activities in locating critical materials and manufacturing facilities and expediting deliveries of urgently needed requirements.

(5) Persistently encourage subcontracting where same will expedite production and utilize idle facilities.

(6) Make plant surveys and prepare reports on prospective contractors—request for same received from Navy bureaus and offices via Industry Cooperation Division, Washington Office.

(7) Assist the effective operation of War Production Board Critical Tools Service—weekly inventory of available hours on critical machine tools.

(8) Assist Smaller War Plants Division of the War Production Board in placing Navy Prime contracts or subcontracts with properly qualified small plants.

(9) At the request of Naval Inspectors visit plants manufacturing naval materials, assisting the inspector in all ways possible as to expediting, priorities, subcontracting, etc.

(10) Cooperate with Naval Inspectors in the location of facilities and materials for prime contractors and subcontractors to break bottle-necks and backlog conditions on any items of naval construction, conversion or repair."

9TH & 10TH WPB REGIONS

Senior Naval Advisor, Comdr. John J. Haviside, USNR; Assistant, Lt. E. A. Cunningham, USNR; (Ret.) War Production Board (Tel. Klondike 2-2300), 1355 Market Street, San Francisco, California.

Naval Advisor, Lt. Charles E. Bourne, USNR; Lt. Latham L. Dodge, USNR; Lt. (jg) W. P. Toepke, USNR; Ens. H. E. F. Hawkins, Jr. USN; Ens. R. H. Madden, USNR.

War Production Board (Tel. Klondike 2-2300), 1355 Market Street, San Francisco, California.

Naval Advisor, Lt. Comdr. A. C. Leonard, USN; Lt. Eli H. Levenson, USNR. War Production Board (Tel. Richmond 0371), 1031 So. Broadway, Ext. 182-183, Los Angeles, California.

The Why of Water Treatment

(Continued from preceding page)

both of which can be run in two or three minutes with very little equipment.

The third phase of boiler water treatment concerns corrosion. There are three main causes of corrosion in the boiler; the first and most prevalent is oxygen; the second, is carbon dioxide, and the third is hydrogen sulphide. Most corrosion in boilers takes place underneath blisters of scale where these gases can accumulate and remain in contact with the metal long enough to accomplish the corrosion of the metal. Elimination of the scale quite obviously settles that part of the problem especially below the water line. The corrosion problem has been thoroughly covered in many previous papers to this organization. Therefore, it is sufficient for me to say that any chemical treatment such as alkalinity for carbon dioxide corrosion and sodium sulphite for oxygen corrosion will not interfere with any maintenance tests required to prevent foaming or scale formation in the boiler. The most important thing to remember, however, is that the use of chemicals to prevent either scale formation, foaming, or corrosion or all three will have a direct bearing one on the other and should at all times be taken into consideration.

Nomads March Meeting

A musical program and a talk on Japan were the features of the regular monthly dinner meeting of the Los Angeles Chapter of Nomads held in Los Angeles, March 10, 1943. The meeting was called to order by the retiring president, W. F. Bettis, who introduced the new officers. The president then had Billy McGraw stand and take a bow for the excellent poems he has been furnishing the Flying Carpet, the official publication of the Los Angeles Chapter. The meeting was then turned over to the new president, Henry Pullman, who, after taking over, introduced the Master of Ceremonies for the evening, Earl Daniels.

The M. C. first introduced Dr. Kenneth Walker who presented a singing program based on the radio program "Sing To Win" which he originated and conducted for many months over a national hook-up. Dr. Walker and his accompanist received a hearty round of applause upon the completion of their entertainment.

Following the musical numbers the Master of Ceremonies presented Dick Atkinson who had delivered an interesting speech on Russia at a previous meeting. After a few brief remarks on the current European situation Mr. Atkinson introduced the speaker of the evening, R. J. Purdy.

The subject of Mr. Purdy's talk was Japan's Government of Her Colonies." The speaker had spent a considerable period of time in Japan, Manchukuo, Korea and the occupied portion of China before Pearl Harbor, making a study of the Japanese and the way they treated conquered territory. He gave his impressions of the Japanese people, comparing them with the Chinese, and told how the military clique got control of the government of Japan. Following his talk many of the Nomads and their guests asked questions pertaining to the current situation in the war area.

Guests at the March Meeting of the Nomads: Sherman L. Pease, C. H. Harrison, Phillipi Gordon, Chas. Bridgewood.

A large number of guests were present at the meeting among whom was Ray Dudley, Regent of the Houston Chapter, who spoke a few words. As usual there were several men from oil countries outside the United States, including Phillipi Gordon of Kern Trinidad Oilfields, Lt.; Charles Bridgewood and C. H. Harrison of U. B. O. T. from Trinidad; and Sherman L. Pease who was formerly with the Shell interests in Trinidad and later in Roumania.

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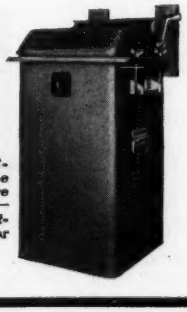
So—why waste time and hard-to-get materials building *special* enclosures? G.E. has a *standard* one that will fit the job.

***EASY INSTALLATION, TOO*—G-E combination starters—combining a motor-circuit switch and a magnetic starter in one compact unit—give you added savings, also, because you mount and wire one device instead of two.**

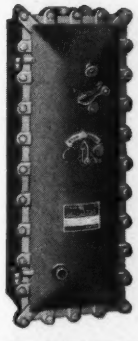
Call or write any G-E office for further information. *General Electric, Schenectady, N. Y.*

DUST-TIGHT—The Type 5 enclosure is for use where the dust content of the atmosphere is so heavy as to make a dust-tight case desirable.



CORROSION-RESISTANT—These starters (Type 8) are made in two forms—one for corrosive atmospheres and one for hazardous locations.

GENERAL-PURPOSE—The Type 1 enclosure is suitable for general-purpose, indoor applications where atmospheric conditions are normal.



FOR HAZARDOUS LOCATIONS—The Type 7 case for Class I, Group D, locations is made of cast, high-strength alloy. Flanges will not permit escape of hot gases.

WATERTIGHT—The Type 4 case is suitable for outdoor use, and for installations in damp places indoors.

Order Standards—

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W. C. Kinder

Emsco Appoints New Officers

Emsco Derrick & Equipment Company announces the appointment of W. C. Kinder and C. L. Lamkin as Vice-Presidents of that company effective March 1, 1943.

Mr. Kinder entered the Emsco organization in June, 1939 as California Manager of Sales of the D & B Division. In January 1941 he became Assistant to the President and on March 1, 1943 was promoted to Vice-President.

C. L. Lamkin

Mr. Lamkin entered Emsco's employ in April, 1928 in the Sales Department. On January 1, 1940 he was transferred to Texas as Manager of Emsco's Houston Plant. On March 1, 1943 he became a Vice-President of the company.

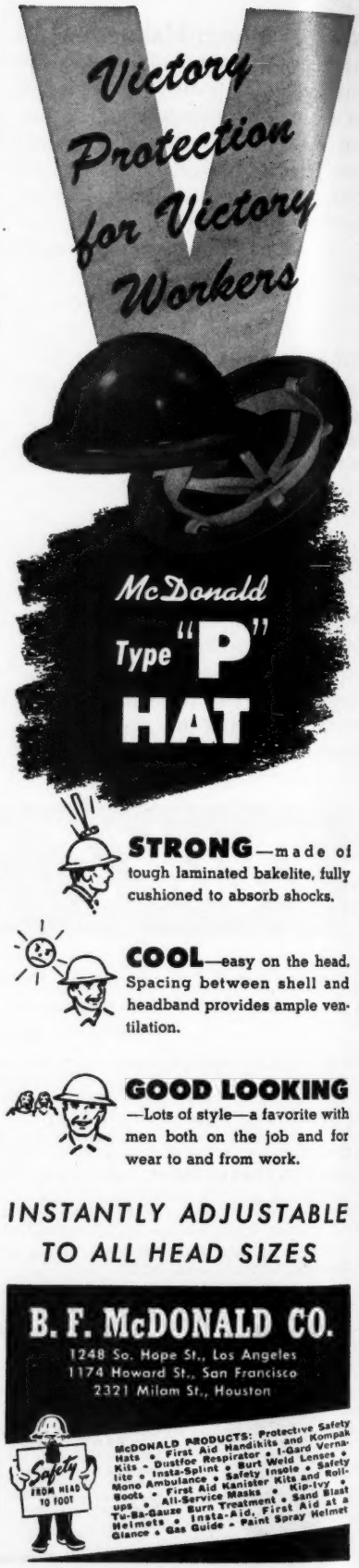
Standard of California Completes $9,500,000.00 Toluene Plant

Completion of one of the largest plants in the United States for the manufacture of toluene, prime ingredient of T. N. T., was announced by Standard Oil Company of California.

The new plant, erected "some where in California" was built by Standard at a cost of $9,500,000.00 and was completed three months ahead of the original schedule. The entire production capacity will be delivered to the United States government for conversion into bombs and for other war purposes. During the last war most of toluene used was a coal by-product. Its cost to the government was several times the present cost, according to R. G. Follis, Standard Oil's vice-president in charge of manufacturing. Drastic reduction in cost, Mr. Follis said, is due to new catalytic processes for the synthetic production of toluene from petroleum, as developed by the laboratories of Standard and other companies. Since the processing operation for the manufacture of toluene requires several weeks time, first deliveries from the new plant will not be made until some time next month.

Walton Now With Clark Bros.

Geo. W. (Jack) Walton is to head new Division for Clark Brothers Company, Inc. Walton comes to the Clark Brothers organization with a background of over twenty years of successful sales and engineering experience. He will make his headquarters in Tulsa, Oklahoma.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THIS LAUGH

OFF!!

The recruit from Ireland spent his leave in England. Asked on his return to the front what he thought of the place, he said:

,"Faith, London is a great city; but it's no place for a poor man unless he has plenty of money."

Many a student runs after a chicken only to find it's a wild goose chase.

Coed: "I went riding with a stranger. Did I do wrong?"

Dean: "If my years of experience count, the answer is——probably."

"Tell me how you and your wife have lived so happily together all these years."

"Simple enough. She goes her way and so do I."

It won't be wrong now, said the coed as she was led to the altar.

An old hermit died recently after seeing an automobile for the first time.

He didn't see it soon enough.

The bride tottered up the aisle on the arm of her father, who was wheeled in his armchair by three of his great grandchildren. She was arrayed in white and carried a big bouquet of white rose-buds; her hair though gray was bobbed, and she smiled and nodded to acquaintances.

The groom was able to walk unaided with the assistance of two handsome mahogany crutches. His head was bald, and his false teeth chattered nervously.

They were the couple who waited until they could afford to get married.

"I get a big kick every time I kiss Mary."

"Gee, she doesn't object to mine."

The wonderful love of a beautiful maid,
The love of a staunch true man,
And the love of a baby unafraid
Have existed since time began;
But the greatest love, the love of loves,
Even greater than that of a mother,
Is the tender, passionate, infinite love
Of one drunken bum for another.

Mother: "You know, Geoffrey, Norma is nearly 17 years old, so today, I had a frank discussion with her about the facts of life."

Dad: "Ah! Did you learn anything new?"

Insurance Man: "Do you want a straight life?"

"Well, I like to step out once in a while."

There was a young girl from Siam,
Who had a rough lover named Priam—
"I don't want to be kissed,
But if you insist
God knows, you are stronger than I am."

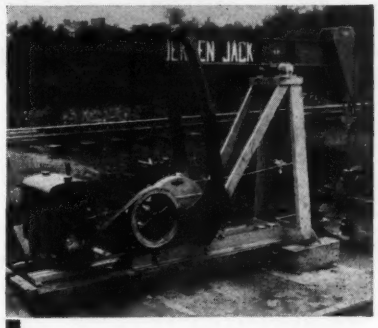
A breezy matron from Chicago was visiting among the First Families of Boston and the Back Bay dowagers were proceeding to put the middle westerner in her place.

"Here in Boston, you know," one of the good dames remarked at tea, "the family is the thing that counts, we are intersted only in breeding."

"Well," commented the lady from Illinois, "out in Chicago we think it is a lot of fun too, but we manage to have some outside interests."

Mother: "That brazen Miss Vamp boasts that she has been kissed by every married man in town except one!"

Father (absently): "I wonder who he can be."



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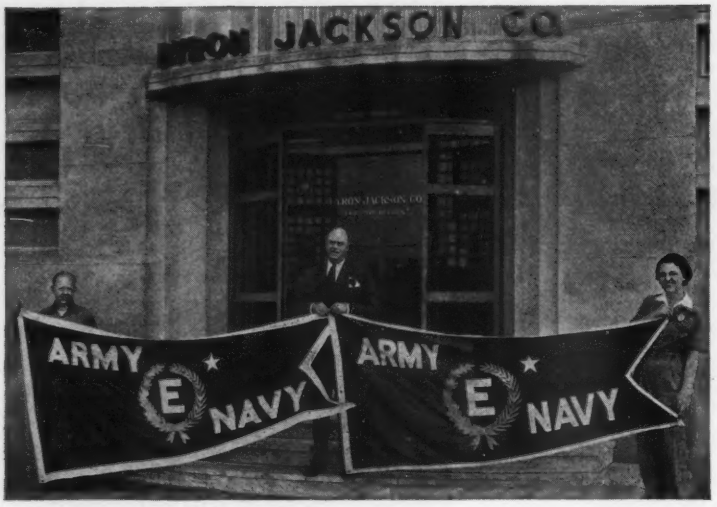

E. S. Dulin, President, Mrs. Hassie Ramey and William Powell proudly display flags with "stars" awarded for continued production achievement.

T.W.A. Contributes to Red Cross

Tide Water Associated Oil Company, in a statement issued from its headquarters in San Francisco, announced the contribution of $26,000 to the National War Fund Campaign of the American Red Cross.

This contribution, made on behalf of the Eastern, Mid-Continent and Western Divisions of the Company, will be allocated to the Red Cross Chapters in the communities where the Company's principal headquarters points are located.

Mr. William F. Humphrey, President of the Company, is addressing a special message to employees, urging their cooperation with the Red Cross Drive by making their individual contributions. At the Company's office in San Francisco, a well-organized program is already under way, its objective being to top all previous records for Red Cross subscriptions.

In addition to financial participation, members of the company are actively working with the Red Cross in its current national campaign, volunteering their services in various capacities which include publicity, promotion, and solicitation of funds.

American Steel & Wire Issues New Steel Analysis Charts

Columbia Steel Company officials in San Francisco were recently furnished with a new revised standard steel analysis charts published by American Steel & Wire Co., U. S. Steel subsidiary, to aid war-time steel users.

Embracing all modifications and changes in the analyses of AISI, SAE and the new NE steels up to February 1, the chart folds up to a small compact size readily available for easy reference.

A new helpful feature is the breakdown which shows whether or not various types of products are available in specific analyses, together with the listing of the varying amounts of different component elements used in producing the various grades of steel. The chart covers carbon and free cutting steels, manganese, nickel, nickel chromium, and molybdenum steels, in addition to chromium, chromium vanadium, silicon manganese, and National Emergency steels.

Copies may be obtained by writing on a letter head to the American Steel and Wire Co., Sales Promotion and Advertising Department, Rockefeller Building, Cleveland, Ohio.

Byron Jackson Adds Star to Army-Navy "E" Flags

"For meritorious services on the production front" during the past six months, the War Department has just awarded to Byron Jackson Co. the "star" to be added to the two Army-Navy Production Award "E" Flags presented to this concern in August, 1942. The two Los Angeles plants, which previously produced oil well tools and centrifugal pumps exclusively, were recognized separately with a dual flag presentation last year, the first of its kind for war production.

Quota Assigned For Scrap Drive

A quota of 285,560 tons was assigned Southern California for a new scrap metal drive which will end July 1. In the campaign for scrap during the last six months of 1942 the Southland exceeded its quota by more than 15 per cent and collected 259,364 tons. Although the new drive will seek almost the same amount, WPB heads pointed out that the job will be much more difficult because the area has been combed once already.

Approve Continuation of "Cole" Committee

The House Rules Committee on March 11 approved a resolution to continue the oil investigation of the House interstate and foreign commerce subcommittee over which former Representative Cole presided for a number of years and which now is presided over by Chairman Clarence F. Lea. The life of the investigating committee expired at the end of the last session.

5581 District 5 Stations Closed

C. S. Beesemyer, chairman of District 5 marketing committee, reported that 5581 service stations have closed in this district as of March 1, 1943. Of the total 3794 were in California; 516 in Oregon; 840 in Washington; 313 in Arizona; and 118 in Nevada.

Field Development

Los Angeles Basin

Conoco Starting New Wildcat Play

Continental Oil Co. is preparing to start a new wildcat east of the Montebello field in Los Angeles county. The well, Baldwin No. 1 is located in the southwest quarter of sec. 3-2s-11w. The company has blocked up a large part of the Baldwin and Pellisier holdings in the area.

McNally "Cat" Fishing Pipe

The Texas Co.'s third attempt to find deep production west of the Coyote fields is temporarily stalled by a fishing job. The test, McNally No. A-3 on sec. 22-3s-11w, stuck drill pipe at 7700 ft. after bottoming at 8416 ft. and while washing-over stuck 9 in. wash pipe at 6900 ft. At last report the well was spotting oil and working to loosen. No findings in the well have thus far been released.

Whittier Well To Deepen

With new operating personnel Los Nietos Valley Oil Co. Woodward No. 1 is cleaning out to deepen. Located on sec. 29-2s-11w immediately southwest of the town of Whittier, the well will be carried on from present depth of 3600 ft. under the direction of Fred Poole. East of town at the flank of the Whittier field H & C Oil Co. Joyce No. 1 is coring ahead at 5245 ft. with no showings yet reported.

Costa Mesa Well Working

Chas. W. Camp's well No. 25, sec. 15-6s-10w of the Costa Mesa area, is coring at 965 ft. with good gas showings on the ditch. The well is testing shallow, heavy oil producing sands indicated in the area by earlier wildcatting.

On the adjacent section 15 A. A. Carrey is preparing to drill Meyer No. 1 at a site 1560 ft. south and 2140 ft. west of the centerlines of Fairview Ave. and Victoria St. To the southwest, on section 20 of the township, D. W. Elliott has rig up for Townsend Land Co. No. 1 near the mouth of the Santa Ana River channel.

Las Llajas "Cat" Now Drilling Deep

Western Gulf Oil Co.'s Brady Estate No. 1, Sec. 13-3s-17w, is drilling in hard shale at 8181 ft. Located approximately a mile and a half south of the Pico Canyon field the well is the first drilled to depth on the structure. No showings have been reported nor is the wells geologic position publicly defined. The well started in upper Miocene sediments and no bug dope has been released.

In the Oak Canyon field the company's M. A. Gilmour No. 1 is fishing a drill collar after reaching 6395 ft. in sandy shale.

LOS ANGELES BASIN WILDCATS

Area	Well	No.	Section	Depth	Status
Chatsworth	J. Paul Getty, Foothill Orchards	1	6, 2-15	3559	Abandoned
La Mirada	The Texas Co. McNally	A-3	22, 3-11	8416	Drilling
Las Llajas	West'n Gulf Oil Co., Brady	1	13, 3-17	8181	Drilling
L. A. City	Schirm & Rubenstein	H-S 1	24, 1-13	3919	Idle
	Shell Oil Co., Inc., Verne Comm.	1	24, 1-13	5416	Drilling
Montebello	Cont. Oil Co., Baldwin	1	3, 2-11		Location
Newhall	Aztec Oil Co., Sanborn	1	6, 3-16	7327	Suspended
	James C. Brazell, Perkins	1	11, 3-16	4473	Suspended
	So. Calif. Pet. Corp., Lassalle	44-1	3, 3-16	6073	Abandoned
Puente	Bary Oil Co. Inc., Roland	1	14, 2-10	2423	Testing
	Melvin Hansen, Dragna	1	24, 2-10	2840	Cleaning out
Rio Hondo	Potrero Oil Co., Newman	1	32, 1-11	7111	Idle
Temescal	The Texas Co., Dominguez	57-1	1, 4-18		Location
Whittier-La Habra	H. & C. Oil Co., Joyce	1	22, 2-11	5245	Drilling
Orange County					
Buena Park	The Texas Co., B.P.U.	5-J-1	31, 3-10	9018	Drilling
Corona Del Mar	Signal Oil & Gas Co., Irvine	1	6, 7-9	1450	Drilling
Costa Mesa	Chas. W. Camp	25	15, 6-10	404	Idle
Huntington Beach	Carrey, A. A. Meyer	1	16, 6-10		Location
	Richfield Oil Corp., Weirick	1	7, 6-10	2158	Abandoned
Newport Beach	D. W. Elliott Townsend	1	20, 6-10		Rig
San Bernardino County					
Carbon Canyon	Stella, E. F., McDermott	2	5, 3-8	1184	Stdg. plugged
Colton	Supreme Oil Co., Well	1	2, 2-4	940	Idle

Two Complete At Wilmington

General Pet. Corp. redrilled Isco No. A-2 to 3520 ft. and went back on the pump for 192 bbls. net of 15 gravity oil cutting 19.0%. Also completed was Long Beach Oil Development Co.'s "W" 48 which went on the pump for 266 bbls. of clean 15.9 gravity oil. The company is completing No. 52 at 2440 ft. while working on three other projects.

Rig To Deepen Richfield Well

Spitfire Oil Co. is rigging up to deepen the old Forward Oil Co. Davenport No. 3 in the Richfield producing area. The well is located northwest of Eureka and Buena Vista Sts. on sec. 28-3s-9w and is currently bottomed at 3890 ft. Present plans call for the well to explore to 6200 ft. as a deep test of the area.

Three Work At Dominguez

A grass root job and two redrills are under way in the Dominguez field. On the Reyes lease Shell Oil Co., Inc., is moving in equipment to drill its new No. 130 while on the westerly field flank R. E. Havenstrite, Operator is redrilling Larronde No. 2 and Union Oil Co. is redrilling Austin No. 1. Bottomed near the 7500 ft. level the redrill wells were knocked off production when earth movement along the fault collapsed the casing.

New Well At Montebello

Standard Oil Co. continues development of the old Montebello field with Baldwin No. 102 latest to the tanks. Bottomed at plugged depth of 2660 ft. the well was last reported pumping 141 B/D 19.0 gravity cutting 5.3%. Next to complete will be No. 107 now washing perforations after landing a combination string of 7 in. on bottom at 2845 ft. In the west end Kern Oil Co., Ltd. is rigging pump to finish Monterey No. 45 at 3297 ft.

Carbon Canyon Well Bails Wet

E. F. Stella McDermont No. 2 which bottomed in gray sand at 1184 ft. and plugged to 1147 ft. for trial, bailed wet and is standing replugged at 1105 ft. The well is located in the hills on sec. 5-3s-8w in the Carbon Canyon-Chino area of San Bernardino county.

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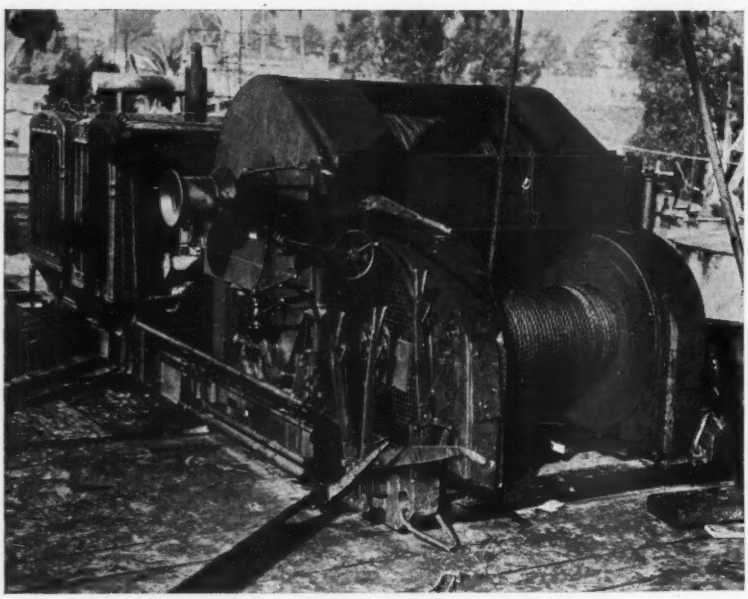

No. 1. Capable of Going to 8000′ with 4″ Drill Pipe
No. 2. " " " " 6000′ " " " "
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Coastal District

Good Well At Ventura Ave.

Shell Oil Co., Inc., completed another of its typically good Taylor lease wells when No. 158 was finished at 9425 ft. flowing 1401 bbls. in 12 hours along with nearly two million feet of good gas. At last report the well was making 877 bbls. of clean 31.7 gravity oil. The company is proceeding with Nos. 160, 161 and 162 as grass root jobs while deepening Taylor No. 83 from 5190 ft.

In the northern section of the field British American Oil Prod. Co. is preparing to redrill and deepen Hartmann No. 9 from present depth of 8764 ft.

Butte County Well Testing

Pacific Western Oil Corp. & Geo. F. Getty, Inc., Independent Expl.-Cana No. 1, sec. 11-23n-1w, cemented 5½ in. casing at 6750 ft. after bottoming in what was reported as Serpentine at 6939 ft. and is testing the gun perforated interval 6710-40 ft. At press time no results had been disclosed.

Santa Maria Wells Show Some Wallop

Union Oil Co.'s Battles No. 5 on sec. 25-10n-34w of the Santa Maria Valley field blew out while pulling drill pipe after landing liner on bottom at 4230 ft. and spewed some of the pipe into the derrick. Brought under control by use of the preventers the well was completed flowing 600 bbls. of 16.8 gravity oil and an unmeasured gas volume.

Union has moved its drilling crew to the west and is at 1000 ft. on Union Sugar No. 18 in sec. 15-10n-35w of the field.

Lodi Test Flows Gas

Amerada Pet. Corp. Lodi Community No. 9-1 on sec. 9-4n-7e in San Joaquin county bottomed at 4471 ft.—plugged to 2590 ft.—and gun perforated 8⅝ in. casing with 30 ½ in. holes in the interval 2580-90 ft. With the tester set at 2572 ft. the well flowed gas at a 9,8000,000 cu. ft. rate with a spray of salt water. If the operators can squeeze off the water while maintaining this volume the well will be a valuable addition to northern California gas reserves.

On another portion of the same play Bankline Oil Co.'s Community No. 1-1, sec. 1-4n-6e, is drilling in the grass roots at 650 ft.

Lompoc Well Yet Testing

Alphonzo E. Bell Corp.'s Lompoc No. 6 on sec. 28-8n-34w in Santa Barbara county is cleaning out to bottom for a barefoot pumping test from the shoe of 7 in. at 4602 ft. to 4997 ft. Previous tests of portions of the interval have resulted in some showings of heavy oil and it is thought probable that commercial production will ultimately be effected.

Rio Vista Field Gets "Gasser"

The Rio Vista Gas field was credited with another good producer when Standard Oil Co.'s Perry Anderson No. 5, sec. 35-4n-2e, was finished at 4480 ft. flowing a maximum rate of 16,480,000 cu. ft. through a ¾ in. bean and was shut in pending demand under 1638/1645 lbs. pressure. Five other projects are scheduled for the field with Amerada Pet. Corp.'s Kuhn Comm. No. 2 on sec. 28-4n-3e already drilling at 650 ft.

Solano Co. Test Deep

Amerada Pet. Corp.'s Starkey Fee No. 1 on sec. 2-6n-2e in Solano county has reached the deep test class and is drilling in unreported formation at 7740 ft. Already materially deeper than anything previously put down in the area the well is geologically important and thus far no findings have been released.

COASTAL COUNTIES WILDCATS

Area	Well	No.	Section	Depth	Status
	Santa Barbara County				
Gato Ridge	General Pet. Corp. Wickenden	2	24, 8-32		Rigging up
Goleta	Del Mar Oil Co., Rowe	1	11, 4-28	3434	Drilling
Lompoc	Alphonzo E. Bell Corp., Lompoc	6	28, 8-34	4997	Testing
	Fickert Oil Co., Ltd., Well	1	8, 7-33		Rig
Los Olivos	Tide Water A. O. Co. Chamberlin	1	33,8-31	4729	Deepening
Purisima Hills	Whittier Assoc. Barham	1	11, 7-32		Location
	Ventura County				
Bardsdale	San Marino Oil Co., Elkins	1	7, 3-19		Rig
Conejo	L. A. Basin Oil Co., Well	1	4, 1-20	1745	Idle
	Sycamore Oil Co., Boylan	1	23, 1-20	2747	Idle
Ojai	Coates, Spencer D., Pirie	5	7, 4-22	1033	Idle
Piru	Continental Oil Co., Holser	2	14, 4-18	2386	Drilling
	Delroy Pet. Corp., Fisk C. H.	3	22, 5-18	2802	Idle
	Pac. West. O. Corp. Temescal	14	4, 4-18	2386	Drilling
	T.W.A. Oil Co., Hidden	2	5, 4-18	5254	Drilling
Rincon	Shell Oil Co., Inc. Tomson	1	8, 3-24		Rigging up
Santa Paula	J. J. Stevens Corehole	1	1, 4-20	1102	Prep to deepen
Sespe	McCaslin, W. E., Burson	1	19, 4-19	2039	Idle
	Volunteer Pet. Co., Tar Creek	3	28, 5-19	540	Idle
South Mt.	South Mt. Oil Co., Well	1	19, 3-20	2750	Idle
Timber Canyon	A. T. Dennison, Well	1	13, 4-21	2009	Cleaned out
	Crude Oils, Inc., West	1	19, 4-20	958	Idle
	Fletcher & Babcock, O'Leary	1	29, 4-20		Location

NORTHERN COUNTIES WILDCATS

County	Well	No.	Section	Depth	Status
Butte	Pac. West'n & Getty Cana	1	11,23n-1w	6939	Testing
Monterey	Loma Grande Oil Co., Corey	1	23,24s-10e	4318	Idle
	Columbia Oil Co., Vierra	1	7, 13s-2e		Rig
Sacramento					
	Richfield Oil Corp., Natomas	1	17, 10n-4e	2418	Drilling
San Joaquin	AmeradaPet.Corp.,Lodi Comm.	9-1	9, 4n-7e	4471	Testing
	Bankline Oil Co., Comm.	1-1	1, 4n-16e	650	Drilling
	Standard Oil Co., Blewett Comm.	3	23, 3s-6e		Rig
San Luis Obispo	W'n Gulf Oil Co., Huasna Comm.	1	35,31s-14e	1291	Drilling
	Los Nietos Co., Holmes	1	35,31s-14e	3935	Abandoned
Solano	Amerada Pet. Corp. Starkey Fee	1	2, 6n-2e	7740	Drilling

Foxen Canyon Test Spudding

General Pet. Corp. is preparing to spud Wickenden No. 2 on sec. 24-8n-32w for further exploration along an established uplift suspected of carrying a heavy oil accumulation similar to the Cat Canyon production. The test is located in the Foxen Canyon area off the southeasterly tip of the Cat Canyon field.

Los Olivos Well Deepens

Tide Water Assoc. Oil Co. is deepening its Chamberlin No. 1 in hard cherty shale at 4729 ft. Located on sec. 33-8n-31w near already established production, the well was once completed at 4430 ft. for 265 bbls. daily by a distillate injection method but the recovery was considered a bit heavy since it averaged only 6 gravity. In the event that better production is not found the original zone will probably be re-utilized.

Purisima Hills Test To Start

Whittier Associates is grading roads to a site on the Barham Ranch for a wildcat venture. The test will be located approximately 6500 ft. north and 6950 ft. west of the southwest corner of Rancho Corral de Quati on projected sec. 11-7n-32w at the northern flank of the East Purisima Hills, some 4 miles southeast of Los Alamos in Santa Barbara county.

Goleta Well Cores Ahead

Dal Mar Oil Co. Rowe No. 1 on sec. 11-4n-28w in the Goleta area is coring ahead in hard Temblor shale at 3434 ft. No showings have thus far been reported.

Piru Well Proceeding

Continental Oil Co. Holser No. 2, sec. 14-4n-18w, is deepening in shale at 4828 ft. after a swab test of oil sands in the interval 4020-4347 ft. failed to effect commercial production. The test did however recover some oil with fair gas showings.

Pacific Western Oil Corp. is proceeding with its development program in the area. Currently working is Temescal No. 14 on sec. 4-4n-18w which is at 2388 ft. in shale while rig has been built for No. 17.

On section 5 of the township Tide Water Assoc. Oil Co. Hidden No. 2 is turning to the right at 5254 ft. in shale showing relatively steep dips. Some oil showings have been encountered in the Miocene shales.

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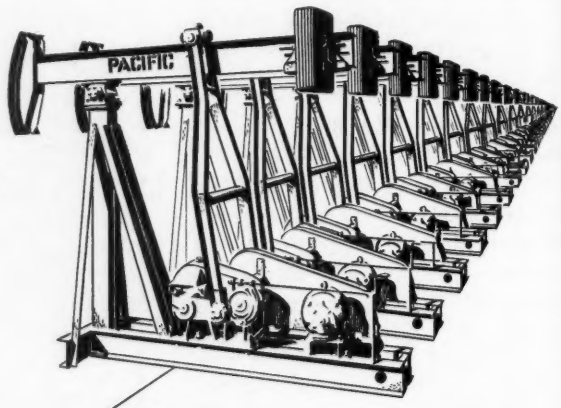

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San Joaquin Valley

Jacalitos Try Now Under Way

Standard Oil Co. is drilling its well No. 61-35 near the 400 ft. level in its attempt to extend production in the Jacalitos field slightly southeast to its location in the northest quarter of sec. 35-21s-15e.

South Belridge Outpost Planned

Petromont Oil Corp. is preparing to drill Petromont-Belridge No. 1 as a wildcat extension try approximately three quarters of a mile southwest of the northerly tip of the South Belridge field. The well will be put down 2180 ft. north and 600 ft. east of the southwest corner of sec. 25-28s-20e under contract by Bender Drilling Co.

Commanche Point Well Suspended

T. W. Burnham's Chiquita No. 2 on sec. 34-12n-18w is reported suspended in granite at 1990 ft. after entering the rock some 380 ft. in search of formation change. No other work is currently being done in this south San Joaquin Valley district.

Madera Co. "Cat" Makes Gas Flow

The Texas Co.'s Gill No. 38-16 on sec. 16-13s-16e in the Mendota area of Madera county, effected a water shut off on holes at 5724 ft. and with the 7 in. casing gun perforated in the interval 5760-45 ft. the well flowed gas at an estimated 8,000,000 cu. ft. rate which was water free and contained no oil. It would appear that the company has opened up another good gas field in Northern California.

Posuncula Try Quits

Shell Oil Co., Inc., is abandoning KCL-Posuncula B No. 84-27 in gray sand and shale at 8370 ft. Located on sec. 27-30s-26e the well sought production indicated by Standard Oil Co.'s Canfield Ranch well on a nearby location in the section. This well finished in 60 ft. of Stevens sand in 1938 making a small amount of 25 gravity oil which despite further drilling was never duplicated. It is thought that the 20 acres proved good are the top of an extremely small domal high.

Mountain View Outpost Coring

Di Giorgio Fruit Corp. which seeks production southeast of the Mountain View field is spot coring No. 4 at 2500 ft. The test, located near the center of sec. 10-31s-29e, is approximately a half mile northeast of the Mt. View-Arvin fault and is expected to go deep enough to prospect the 6000 ft. zone produced in the Arvin field.

The company recently abandoned a third wildcat further to the east on sec. 7-31s-30e after entering granite at 1600 ft. which results were comparable to those on wildcats Nos. 1 and 2.

Kern Front Well Pumps

Westates Pet. Corp. Cauley No. 37, sec. 16-28s-27e, was completed at 2878 ft. pumping clean 15 gravity oil at a 145 bbl. daily rate. Latest of a series, the well is to be followed by No. 45 which is currently rigging up. Standard Oil Co., which runs one string in the field, is testing for water shut off on No. 38 on section 15 of the township while S.M.S. Oil Co. well No. 3, section 10, is drilling in sand and clay at 2445 ft. after noting oil sands at 2200 ft. General Pet. Corp. has poured foundation for Young No. 13 to continue development on section 14 of the township.

Elk Hills Try To Be Drilled

Pacific Western Oil Corp. & Geo. F. Getty, Inc., are preparing to drill McNeil No. 1 as a wildcat try three quarters of a mile northwest of the Elk Hills Pool. The site is 330 ft. north and 330 ft. east of the southwest corner of sec. 22-30s-24e.

SAN JOAQUIN VALLEY WILDCATS

Area	Well	No.	Section	Depth	Status
Fresno County					
Cantua Creek	Richfield Oil Corp., Cantua Co.	1	14, 17-15	2552	Drilling
	Superior Oil Co.,Cantua-Land	54-36	36, 17-15	1118	Drilling
Jacalitos	Standard Oil Co., Well	61-35	35, 21-15	3595	Drilling
Guijarral Hills	Standard Oil Co., Well	62-29F	29, 20-16		Rig
Wheatville	Superior Oil Co. Kreyenhagen	81-22	22, 17-18		Location
Kern County					
Antelope Hills	C.C.M.O. Co. Antelope Fee	12-1	12, 28-19	204	Drilling
Bowerbank	The Texas Co., Bowerbank	16-C	6, 29-24	3674	Drilling
Comanche Point	T. W. Burnham, Chiquita	2	34, 12-19	1990	Drilling
Cymric	Los Nietos Co., Sheep Springs	1	20, 29-21	1925	Drilling
Dyer Creek	D. D. Dunlap, Dyer Creek	1	11, 26-27	2294	Idle
Elk Hills	Pac. Westn & G. F. Getty, McNeil	1	22, 30-24		Location
Kern River	Gen. Pet. Corp. Kernco	1	1, 29-28	4159	Abandoned
	O. H. Calhoun Bridge	1	17, 28-28		Location
Midway-SE.	The Texas Co., P.U.P.	2	33, 11-23	10434	Drilling
Mt. View	DiGiorgio Fruit Corp., Well	3	7, 31-30	1665	Abandoned
	DiGiorgio Fruit Corp., Well	4	10, 31-29	2425	Drilling
Posuncula	Shell Oil Co., Inc. KCL-P-B-84-27		27, 30-26	8370	Abandoned
Round Mt.	Harp & Brown, Olcese	1	17, 28-29		Rig
	Iseminger Bros., Well	1	2, 28-28	2030	Drilling
Strand	T.W.A.O. Co., KCL	76-8	8, 30-26	5595	Drilling
	T.W.A.O. Co., KCL	32-17	17, 30-26	8159	Drilling
Kings County					
Hanford	The Texas Co., Souza	1	33, 17-22		Location
Tulare Lake	Shell Oil Co., Inc. T.S.G.	21-28	28, 22-20	10337	Drilling
Madera County					
Mendota	The Texas Co., Gill	38-16	16, 13-16	9154	Testing
San Luis Obispo County					
Midway, NW.	C.C.M.O. Co., Thomas	1	1, 31-21	8546	Drilling
Tulare County					
Pixley	Union-Cont. O. Co., Pacific States	76-25	25, 22-25		Rig

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Two Drill At Cantua Creek

Two wildcat tests are under way in the Cantua Creek area of Fresno county. On Sec. 14-17s-15e Richfield Oil Corp.'s Cantua Co. No. 1 is spot coring in sandy shale at 2552 ft., while Superior Oil Co.'s Cantua Land No. 54-36, on section 36 of the township, is making hole at 1118 ft. It is understood that both wells will be spot cored and tested at intervals while exploring.

Wheatville Area Active

Exploration in the Wheatville area of Fresno county is active with two immediate tests scheduled. Located nearest production is Amerada Pet. Corp.'s Wheatville-Ranch No. F-21-8 which will seek production on sec. 8-17s-18e. This site lies near the company's Truman well which found production last year southeast of the Helmfield. The other project, Superior Oil Co.'s Kreyenhagen No. 81-22 on section 22 of the same township, is located approximately six miles west of the Riverdale field and some four and one-half miles southeast of the Truman well. The wells are expected to add materially to knowledge of geologic conditions in the area between the Helm and Riverdale fields.

Kern County "Cats" Quit

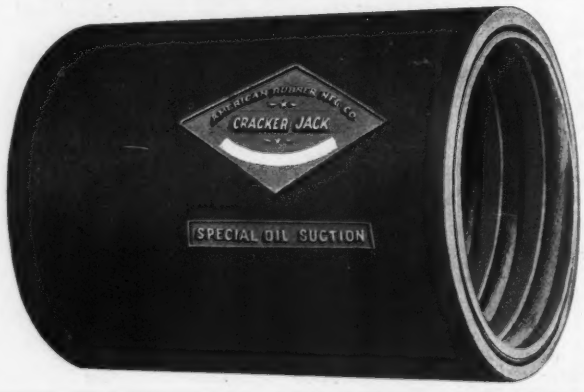
Two wildcat ventures in the Kern River-Round Mountain area are on the hook after finding the Vedder barren. On sec. 1-29s-28e General Pet. Corp.'s Kernco No. 1 quit at 4159 ft. in gray sand and silt after finding no showings in the Vedder entered at 3870 ft., while Trico Oil & Gas Co.'s Howell No. 1, sec. 32-28s-29e, entered Vedder at 2315 ft. and abandoned in silty sand at 2542 ft. without oil showings of any kind.

Edison Well Completing

Jergins Oil Co. Jergins-Texas Fee No. 23-14, located 990 ft. south and 1650 ft. west of the northeast corner of sec. 23-30s-29e in the Edison field, is completing after plugging to 1875 ft. and cementing 8⅝ in. casing at 1775 ft. The 100 ft. to be utilized is reported to be largely very good oil sand. The well bottomed in Schist at 2056 ft. after entering the zone at approximately 2050 ft. First oil sands were picked up at the 1535 ft. level with the Chanac found at 1919 ft. and the Santa Margarita at 1969 ft.

Signal Drilling Beach Wildcat

Signal Oil & Gas Co. is drilling and coring Irvine Beach No. 1 at 1450 ft. without having reported its recovery or formation. Located on sec. 6-7s-9w at the easterly limits of Corona Del Mar the well is thought to be prospecting on the basis of outcroppings on the beach bluffs below the drilling site.



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(Continued from Page 8)

of San Juan Capistrano, California, and makes his home at Altadena, California.

From the State Mining Bureau, Mr. Vander Leck became associated with the Fullerton Oil Company, one of California's leading independents. Now vice president and manager of that company, he was instrumental in the developmnt of its extensive holdings not only in the Buena Vista Hills field of California, but also in West Texas, New Mexico and other areas.

Mr. Vander Leck was one of the charter members of the Central Committee of California Oil Producers, organized in 1930 to be the industry's voluntary cooperative agency for the direction of production curtailment and conservation activities. When the committee's name was changed to that of the Conservation Committee of California Oil Producers, he became its chairman, serving in that capacity for several years.

He also has a long record of service as President of the Oil Producers Agency of California, an organization of independent oil men; is a member of the Petroleum Industry War Council, and has been a member of the District 5 Production Committee since its organization as an industry group in 1941.

L. S. Fish With P.A.W.

The setting up of an Organizational Planning Staff in the Petroleum Administration for War, with Lounsbury S. Fish in charge as director, was announced on March 18th by Deputy Administrator Ralph K. Davies.

The staff will advise and assist the Administrator and the Deputy Administrator in developing and maintaining a plan of organization through which the activities of PAW can be most effectively directed, coordinated, and controlled.

Mr. Fish comes to the Petroleum Administration from a similar position with the War Production Board.

He is on leave of absence from the Standard Oil Company of California, with which he has been associated in organizational work for more than 20 years. A native of San Francisco, he is 43 years old and makes his home in Palo Alto, California.

Mr. Fish participated recently in a survey of the over-all organization and management plans of 30 of the leading industrial concerns of the country and is co-author of the book "Top-Management Organization and Control" in which the principal findings of that survey are embodied.

Ryan Accepts Chairmanship of P. I. W. C.

Study of the post-war readjustments of the petroleum industry will be started at once by a newly-appointed group of oil men working under the Petroleum Industry War Council, William R. Boyd, Jr., Council chairman, announced recently.

Paul Ryan of Cleveland, formerly president of the National Refining Co. and widely-known oil man, has accepted the full-time post as chairman of the working subcommittee and will serve without compensation. The subcommittee's work will be supervised by the Council's committee on petroleum economics of which Dr. Robert E. Wilson, president of Pan American Petroleum and Transport Co., New York, is chairman.

"Mr. Ryan brings to this job a wealth of experience in both the technical and managerial sides of the oil industry", Mr. Boyd said, " and we are confident that his committee's work will materially help the industry in thinking ahead about post-war readjustments that may be necessary."

Institute and P. A. W. Report on Reserves

"The petroleum industry did not find nearly enough oil last year." William R. Boyd, Jr., president of the American Petroleum Institute and chairman of the Petroleum Industry War Council, said recently.

This fact is supported by two reports on reserves recently made, one by the Committee on Reserves of the Institute and the other by the Petroleum Administration for War. Both reports demonstrate the urgent necessity for more wildcat drilling.

The report of the Institute committee shows a total addition to reserves in 1942 of 1,878,976,000 barrels of crude oil, less the consumption of 1,385,479,000 barrels during the year. However, he pointed out, only 260,051,000 barrels of the total was from the new fields discovered in 1942. This is substantially smaller than the volume of discoveries from new fields in any recent year and compares with the average estimate of 559,243,000 barrels for each of the past five years. The remaining increases in reserves as shown by the report resulted from extensions and revisions of previously discovered fields, Mr. Boyd said. Such revisions from year to year are necessary for the reason that it is seldom that a field of importance will have shown its total potentialities at the end of the year in which it was discovered. Only reasonably proved reserves are included under the heading of "new reserves". Reserves proved by subsequent developments are classified as "extensions and revisions".

"The decline in discoveries of new oil fields", said Mr. Boyd, "shows that the present high rate of exploratory efforts of the industry must be still further accelerated as is being strongly urged by the Petroleum Administrator for War in order to maintain the country's productive capacity."

S. F. Man Named to WPB Advisory Committee

M. L. Baker, Standard Oil Co., San Francisco, has been named a member of WPB's Liquefied Petroleum Gas Industry Advisory Committee, according to advices received here today from Washington.

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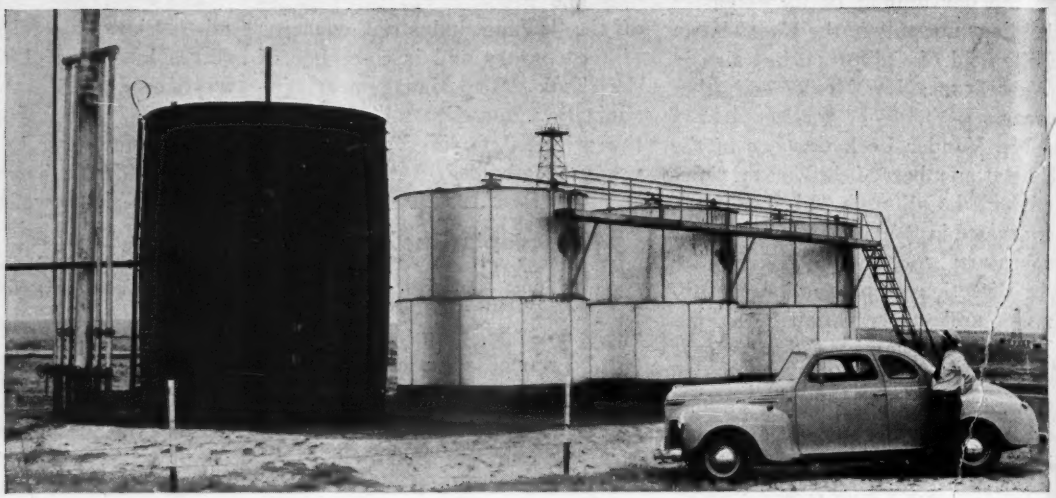

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